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THE CONTEXT OF KANT'S ETHICAL THOUGHT—I

No satisfactory exposition of the views of any great thinker can be derived from the mere examination of texts, no matter how carefully this textual research is carried out. Significant, creative exposition requires many decisions, selections and evaluations. This is particularly true if one attempts a systematic exposition of Kant's ethics. Kant's ethical writings contain numerous contradictory and contrary passages, and innumerable passages which can easily distort the conception of the whole of his ethical theory if their importance is either exaggerated or minimized. In order to present a view of Kantian ethics that deserves serious consideration, one must do more than cite texts. A sound, constructive, philosophical interpretation of Kant's ethics must be grounded in the context of Kant's ethical thought. That is, the measure for selection and evaluation and interpretation of Kant's writings must stem from one's knowledge of (*a*) Kant's conception of philosophy, (*b*) his philosophical methods, and (*c*) his central problems and doctrines. As Kant said in regard to theoretical knowledge, so we may say in regard to the understanding of his work : " Accidental observations, made in obedience to no previously thought-out plan, can never be made to yield a universal law ",[1] nor, we may add, a universally valid

[1]KdrV, Bxiii : Kemp Smith, p. 20.

In order to simplify references, I have abbreviated the titles of the books cited as shown below. I have usually cited both the German text and an English translation. Unless otherwise indicated, translations are my own.

IKW	*Immanuel Kants Werke*, ed. Ernst Cassirer.
A	*Anthropologie, IKW*, vol. 8.
Gr	*Grundlegung zur Metaphysik der Sitten, IKW*, vol. 4.
KdpV	*Kritik der praktischen Vernunft, IKW*, vol. 5.
KdrV	*Kritik der reinen Vernunft, IKW*, vol. 3.
KdU	*Kritik der Urteilskraft, IKW*, vol. 5.

interpretation. Prior then to any exposition of Kant's ethical theory that can hope to be sound, a determination of the context of that theory must be attempted. This article is such an attempt.

I
THE KANTIAN CONCEPTION OF PHILOSOPHY

Kant's conception of the philosophic enterprise is not new—its roots can be traced back to Socrates. But Kant's exposition of his conception of philosophy reveals emphases that are original and of fundamental importance in the development of his philosophy. The general area of philosophy, according to Kant, is that of rational, discursive knowledge.

To clarify the general area of philosophic knowledge, Kant, in both the first *Critique* and the *Logic*,[2] classifies knowledge according to its two modes of origination : first, from the standpoint of its objective origin, that is, by reference to the sources from which the knowledge comes, and second, from the standpoint of the subjective origin, by reference to the manner in which knowledge is acquired. In respect to its objective origin, knowledge is either rational or empirical, since these are its only objective sources. In regard to the way in which the subject acquires knowledge, it is either rational or historical, regardless of its objective origin.

Elaborating the character of knowledge under the subjective mode of origination, Kant explains that historical knowledge is knowledge acquired from data. In relation to the knower, this knowledge comes from without, and the knower adds nothing substantial to it. One has historical knowledge, not rational knowledge, if when one has been told something, he remembers what he has been told so that he can repeat it. With slight variations in degree, this is the character of most learning, and one can even learn philosophy in this manner. The knowledge so acquired may have been rational

Logik	*Logik*, *IKW*, vol. 8.
Orientierung im Denken	*Was heisst : Sich im Denken Orientieren ?*, *IKW*, vol. 4.
Prol	*Prolegomena zu einer jeden künftigen Metaphysik*, *IKW*, vol. 4.
Theorie und Praxis	*Über den Gemeinspruch : das mag in der Theorie richtig sein, taugt aber nicht für die Praxis*, *IKW*, vol. 6.
Zum ewigen Frieden	*Zum ewigen Frieden : ein philosophischer Entwurf*, *IKW*, vol. 6.
Beck	*Critique of Practical Reason and other writings in Moral Philosophy*, trans. by Beck.
Carus	*Kant's Prolegomena to any Future Metaphysics*, trans. by Carus.
CoaJ	*Critique of Aesthetic Judgment*, trans. by Meredith.
CotJ	*Critique of Teleological Judgment*, trans. by Meredith.
Kemp Smith	*A Translation of Kant's Critique of Pure Reason*, by Kemp Smith.
LoE	*Lectures on Ethics*, trans. by Infield.
Logic	*Introduction to Logic*, trans. by Abbott.
Paton	*The Moral Law or Kant's Groundwork of the Metaphysic of Morals*, trans. by Paton.

[2]This work is the collection of Kant's lectures on logic which was compiled under Kant's direction by G. B. Jasche and published in 1800. The *Logic* is both pre- and post-critical since the lectures were composed over the years from 1755-1796, during which period Kant lectured on logic fifty-four times. See Paulsen, F., *Immanuel Kant, His Life and Doctrine*, p. 57.

ledge for the teacher, but for the student it is merely historical. Whatever rationality is present in it was put there by someone else. Such a student " has grasped and kept ; that is, he has learnt well, and is merely the plaster-cast of a living man ".[3]

Rational knowledge, however, must stem from inward effort, and its objective source must lie in principles which, when employed by the individual, can provide for the criticism and even the rejection of historical knowledge. Knowledge cannot be acquired rationally without an active and free mind that is neither imitative nor mechanical. Such are the mental qualifications of a judge, legislator, or philosopher.[4] The philosopher, however, is distinguished by the fact that the knowledge he acquires rationally is from principles only. Philosophical knowledge, therefore, is rational knowledge both in terms of objective origin (source) and subjective origin (acquisition).

Philosophy has one partner sharing the field of knowledge which is rational both subjectively and in point of origin—namely, mathematics. It is distinguished from mathematics by being derived from concepts, while mathematics is derived from *a priori* intuition in space and time from which its concepts are constructed. Mathematics provides intuitive knowledge while philosophy contributes discursive knowledge. Mathematics enjoys an advantage in certainty, but it pays the price of being restricted to quantitative considerations by its inability to present qualities in *a priori* intuition (*ibid.*, p. 342 ; p. 14).

Having thus defined the general area of philosophy as rational, discursive knowledge from concepts, Kant notes that more than one conception of this discipline is possible within this general area. The two most important are what Kant refers to as the " scholastic " and the " cosmic " conceptions. Philosophy has generally been pursued under a scholastic conception which aims at the systematic unity of all philosophical concepts and is satisfied with the merely logical perfection of a philosophical system of knowledge. A philosopher, under this conception, aims at dialectical skills and subtlety of argument ; he " strives for speculative knowledge, without concerning himself over how much this knowledge contributes to the ultimate end of human reason " (*idem*).

For Kant, however, genuine philosophy can be carried out only under the cosmic conception, which regards philosophy as " the science of the ultimate ends of human reason ". No longer aiming at skills of reasoning, philosophy under this conception aims at utility (*Nützlichkeit*), and the philosopher is a practical man who teaches wisdom " by doctrine and example ". He is not a practitioner of clever arguments, but through his own rational insight he is himself a lawgiver.

As such, the true philosopher

[3] KdrV, B864 : Kemp Smith, p. 656 ; see also, Logik, pp. 341, 345 : Logic, pp. 12, 17.

[4] Logik pp. 341-2 : Logic, p. 13. We shall see that in this concept of rational knowledge are contained the seeds of the idea of the Copernican Revolution and of the idea of autonomy in wider than moral application.

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> must, as an independent thinker, make a free and independent, not a slavishly imitative, use of his reason. Nor must it be dialectical, that is, a use which aims only at giving to his knowledge an *appearance of truth and wisdom*. This is the business of the mere Sophist ; but thoroughly inconsistent with the dignity of the philosopher, as one who knows and teaches wisdom.[5]

Kant strives to follow in the Socratic tradition when he considers philosophy under the cosmic conception as directed to the most basic concerns of man.[6] Philosophy, so conceived, must take as its essential ends those which are of concern to everyone. If the essential ends are viewed systematically, one end may be regarded as ultimate while the others are subordinate to it as means to its fulfilment. This ultimate end, which it is the task of philosophy to pursue, to examine, and to clarify, " is no other than the whole vocation of man, and the philosophy that deals with it is entitled moral philosophy ".[7]

Thus, even in the first *Critique*, after having examined the sources of theoretical knowledge and the limits of reason, Kant clearly states the priority of moral philosophy and insists on the primacy of this practical employment of reason. But if the vocation of man is the ultimate end of reason, any inquiry into reason itself cannot be the ultimate end of philosophy. Indeed, Kant strongly suggests that reason itself is instrumental, acquiring value only as it benefits man. In the final analysis, Kant argues,

> Everything . . . verges toward the *practical*, and it is in this tendency of all theory and all speculation in reference to their employment that the practical value of our knowledge consists. This value, however, is not *unconditional*, unless the *end* to which the practical employment of the cognition is directed is an *unconditional* end. The only unconditional and final end (ultimate end) to which all practical employment of our knowledge must ultimately refer is Morality, which for this reason we call *absolutely practical*.[8]

While philosophy has both its pure and its empirical aspects, depending on whether its knowledge is derived from *a priori* or empirical principles, its ultimate concern under the cosmic conception is always practical. It is not surprising, therefore, that Kant should conclude that all the interests of reason, both speculative and practical, and the entire field of philosophy, are encompassed in the following questions :

[5] *Ibid.*, pp. 344-5 : p. 16 ; cf. KdrV, p. 867 : Kemp Smith, pp. 657-658.

[6] It is strange that Kant should have referred to this humanistic, socratic conception of philosophy as the "cosmic" conception. I suppose Kant wanted to stress the breadth of his philosophic concern in the selection of the word "cosmic". He clearly did not intend to emphasize cosmology.

[7] KdrV, B868 : Kemp Smith, p. 658. Vaihinger has pertinently remarked " *Wie Sokrates . . . so habe Kant die Nichtigkeit des Erkennens und das Primat des Handelns gelehrt* ". Vaihinger, H., *Kommentar zu Kants Kritik der Reinen Vernunft*, pp. 2-3.

[8] Logik, pp. 395-6 : Logic, pp. 77-8. Note also, " In the last resort all the elaborate work of our faculties must issue in and unite in the practical as its goal ". (KdU, p. 274 : CoaJ, p. 44.) Cf. A, p. 86.

1. What can I know ?
2. What ought I to do ?
3. What may I hope ?
4. What is man ?[9]

Of these questions, Kant explains :

> The first question is answered by *Metaphysics*, the second by *Morals*, the third by *Religion*, and the fourth by *Anthropology*. In reality, however, all three might be reckoned under anthropology, since the first three questions refer to the last (*idem*).

In this way Kant repudiates any fundamental bifurcation of his philosophy into a theoretical part and a practical part. While Kant does recognize that the understanding finds satisfaction in mere insight, he does not overlook the ultimate reality (*Nützlichkeit*) of such insight, and he heartily rejects the intellectual gourmet who delights in ideas that will never emerge from the schools to influence the way a man lives. Consequently, any chasm which may seem to separate Kant's theoretical from his practical philosophy must be taken as a challenge to his readers. Kant's intention is clear : to have theoretical philosophy serve all other inquiries and to have all philosophical knowledge culminate in the understanding of man, i.e., in philosophical anthropology.[10]

Although the philosophic enterprise, under the cosmic conception, is motivated finally and primarily by the practical goal of morality, Kant has other motives for seeking the unity of all the branches of the philosophical inquiry. Reason itself is practical and seeks as its own end the unity of all its various employments. In contemplating a critique of pure reason, Kant first thought of including both reason's theoretical and its practical employments as parts of a *single* critique of reason as a unitary faculty. Thus, in 1772, he wrote to Markus Herz :

> But without explaining here at length the whole range of the investigation which was continued to the very end, I can say that I have succeeded in my essential intent and am now ready to supply a critique of pure reason, containing the nature of theoretical as well as of *practical* knowledge, in so far as it is purely *intellectual*. Of these

[9] Logik, p. 343 : Logic, p. 15 ; cf. KdrV, B833 : Kemp Smith, p. 635 ff.

[10] The close relationship of the theoretical and practical employments of reason and the primacy of the latter employment is seen in the following passage from Kant's *Logic* :

> " Practical cognitions are either : (1) Imperative, and these are opposed to theoretical cognitions ; or (2) They contain *the principles of possible imperatives*, and are then opposed to speculative cognitions.
>
> " By imperative is to be understood every proposition that expresses a possible free action by which a certain end is to be attained. Every cognition, then, that contains imperatives is practical, and is so called in contrast to theoretical cognitions " (Logik, p. 395 : Logic, p. 77).

It is clear that scientific investigation itself falls under the practical domain since it involves " free actions by which a certain end is to be attained ", and scientific method prescribes imperatives for this free action. In the context of the primacy of practical reason these hypothetical imperatives will be caught up again in the categorical imperative to direct the entire scientific programme towards the attainment of the practical end of man.

> I shall work out the first part, concerning the sources of metaphysics and its *methods* and boundaries, and after that the pure *principles* of morality. I shall publish the first part within three months.[11]

Despite Kant's efforts to develop a unified treatment of the limits of reason, nine years elapsed before he was able to present even the first part of the planned critique of pure reason which he had thought would appear in only three months. In the first *Critique*, which bore the title of the entire original project, Kant was unable to provide a unitary examination of reason in all its aspects. He was able to present only the first of two distinct systems that follow from the application of legislative reason to its two main objects—nature (the philosophy of nature) and freedom (the philosophy of morality). The very idea of two systems, moreover, left him dissatisfied, for he realized that reason would not rest until it had unified these two systems " ultimately in one philosophical system "[12]

The idea of a single system, however, proved elusive, and was a continual source of aspiration and of frustration. Having completed the first *Critique*, Kant was anxious to present his ethical views in a metaphysic of morals. But he realized that such a treatise would have to rise from the foundation of a completed critique of pure practical reason. Here again the unity of reason was a stumbling block. As he put it in the ' Preface ' to the *Foundations of the Metaphysic of Morals* :

> A critique of practical reason, if it is to be complete, requires on my view that we should be able at the same time to show the unity of practical and theoretical reason in a common principle, since in the end there can only be one and the same reason, which must be differentiated solely in its application.[13]

Apparently at this point Kant was no longer content to write a critique of practical reason parallel to the *Critique of Pure Reason*. In the proposed second *Critique* he now hoped to provide the philosophical system based on the moral law and also to demonstrate the ultimate unity of the two systems of nature and morality. Since this work was not yet ready, Kant published the less ambitious *Foundations*.

The goal of unity still eluded Kant when he finally published the second *Critique*. Kant's awareness of his failure to demonstrate this unity in the second *Critique* is revealed in the ' Introduction ' to the second edition of the *Critique of Judgment*. Here he speaks of the understanding and of reason as, thus far, having two distinct jurisdictions—the one, based on the concept of nature, the other, on the concept of freedom—and neither interfering with the other. Dissatisfied with this division of the rational life into distinct and exclusive compartments, Kant therefore presents the third *Critique* as a " means of connecting the two parts of philosophy as a whole ".[14] Thus,

[11]Letter to Markus Herz, dated February 21, 1772, IKW, vol. 9, p. 105 : translated by Schilpp, P., Kant's *Pre-Critical Ethics*, p. 109.

[12]KdrV, B868 : Kemp Smith, p. 659.

[13]Gr, p. 247 : Paton, p. 59.

[14]KdU, p. 244, cf. p. 242 ff : CoaJ, p. 14, cf. p. 12 ff.

in his twenty-year search, from the time of the letter to Herz until the completion of the *Critique of Judgment*, Kant's own thinking provides ample evidence of how reason itself functions as a force driving toward the unity of all philosophical inquiry in one system.

Throughout Kant's writings, then, we can note the influence of the cosmic conception. We see two great motives at work : a dedication to reason, and an *ultimate* dedication of that reason to the service of man. The Kantian conception of philosophy does not call for the development of reason alone—which would involve the adoption of the scholastic conception and would be vain, of little use or interest to anyone. Nor does it call for the pursuit of the ultimately practical goal of philosophy apart from the development of the unity of reason—such a pursuit would be without design, direction, or structure. Rather, the Kantian conception of philosophy calls for a development of practical reason, a development in which the proper demands of both reason and practice are fulfilled.

II

KANT'S PHILOSOPHICAL METHOD : LOGICAL AND TRANSCENDENTAL

Turning now from a consideration of Kant's general view of the philosophical enterprise to a consideration of the method he employs in philosophizing, we find that the fundamental dedication of reason to practice, which was demanded under the cosmic conception, is present in Kant's methods, both as a necessity and as a desideratum.

In the unified pursuit of philosophy, reason in logic provides the structure of possibility in all areas of practice—theoretical, moral, artistic. Logic, being purely formal (that is, having no practical or material component beyond the formal demand that there be such a component), is the science of the laws of thinking without restriction as to the object thought. Consequently, it delimits the right use of both understanding in theoretical matters, reason in moral matters, and judgment in aesthetic matters. Since all areas of practice necessarily involve thinking, logic (as the science which provides rules necessary for thought) is itself practical and shares with all other branches of philosophy the final moral commitment.[15]

In providing the rules for the truth of cognitions in all areas of practice, logic makes two requirements. First, it makes the negative demand that true cognitions be logically possible, i.e., not contradictory. Second, it makes the positive demand that cognitions be " logically well-founded ", that is, " that cognitions rest on principles and have no false consequences ".[16] It is this second criterion which provides for " the *external* logical truth, or the reasonableness [*Rationabilität*] of a cognition ".[17] In this way logic provides the structure for direct disverification and indirect verification

[15] Logik, pp. 332-336 : Logic, pp. 1-6.
[16] *Ibid.*, p. 366 : p. 42.
[17] *Idem.*

which is so important to scientific method.[18] The formal criteria of truth, therefore, are found to be the principle of contradiction and the principle of sufficient reason.

Though these criteria are ineffectual until put into use, that is, until material has been supplied to them, their demand is nonetheless plain. The demand of the universality of reason is one of the sources of the drive toward unity in philosophy. In putting these criteria to work, community in two related senses is demanded—a community of thoughts within an individual, and a community of individuals. For this reason Kant can say that common sense (*sensus communis*) is a touchstone for detecting errors in our use of understanding. How can one check on the full range of his thought, on the truth or falsity of the consequences of his thought, save by transcending not only the limitations of isolated thoughts within himself by recourse to all his thoughts and experiences, but also his own limited thoughts and experiences by recourse to the thoughts and experiences of others? Reason in logic makes its ubiquitous demand for *totality* which is always a force breaking down the isolation of the individual and demanding a working community of those who would think correctly. Thus Kant writes:

> General rules and conditions of the avoidance of error are (1) to think for onseself; (2) to put oneself in thought in the place or point of view of another; and (3) always to think consistently. The first may be called *enlightened*; the second *enlarged*; and the third *consequent* or *coherent* thinking.[19]

We see then that reason, which demands universality in logic as elsewhere, stands in need of implementation by the thinking community in order to achieve the universality which is the mark of truth. In fact, Kant is so impressed with the importance of community for the successful employment of reason that he asks those who deny men the freedom of speech or publication, while admitting their right to think, to tell him

> how much and how correctly would we think if we did not think, as it were, in common with others with whom we mutually communicate. Thus one may well say that the external power which wrests from man the freedom publicly to communicate his thoughts also takes away his freedom to think.[20]

The inescapable dependence of man upon community for sound thinking and knowledge, stated in isolation here, is treated systematically in the *Anthropology* where Kant distinguishes the many varieties of egoism and the risk that accompanies each variety. Egoism is based on the arrogance of the understanding, of taste, and of practical interest; i.e., egoism can

[18] *Ibid.*, pp. 366-7 : pp. 42-3.

[19] *Ibid.*, p. 371 : p. 48. The parallel between this statement of the conditions for the avoidance of error in cognition and the three formulations of the categorical imperative prescribing the conditions for the avoidance of error in morality should be called to mind. Cf. Orientierung im Denken, p. 365 : Beck, p. 305.

[20] Orientierung im Denken, p. 363 : Beck, p. 303; cf. A, p. 13.

be logical, or aesthetic, or practical. The logical egoist is in danger of complete loss of intelligible contact with others by failing to test his judgment and understanding against their judgment and understanding. He believes that he does not need the touchstone of an external criterion of truth. But by his isolation he robs himself of the use of the principle of sufficient reason, since his internal application of this principle to his narrow experience (supposing that he does not further compartmentalize his egoism) by no means exploits its potential usefulness. This egoism runs the greatest risks where the senses are involved and illusion is so frequent. In the final analysis, Kant holds, such logical egoism involves the failure to make use of one's reason at all, for :

> To make use of one's reason means nothing more than to ask one's self, with regard to everything that is to be assumed, whether he finds it practicable to make the ground of the assumption or the rule which follows from the assumption a universal principle of the use of his reason.[21]

The logical egoist, if his egoism is complete, neither appeals to the thought and experience of the community, nor tests, by thinking for himself, the suitability of his thought in the rational community which is encountered when the attempt is made to universalize the fundamental assumptions and principles of his thought. The egoist thus fails to use " the maxim of the self-preservation of reason "[22] and falls victim to superstition and fanaticism.

The aesthetic egoist rests content with his own taste. Others may find his verses, music, dissertations, etc., to be laughable, but he does not care. This sort of egoism precludes aesthetic improvement, since the egoistic individual searches only within himself for the touchstone of the artistically beautiful.

The moral egoist restricts all ends to himself ; no purpose is useful which does not serve him. Personal happiness alone constitutes the determining principle of his will, and he is, therefore, without a touchstone for the true concept of duty, which demands universality.

All forms of egoism are dangerous since they deprive man of the assurances to be derived from careful attention to the logical criteria for the truth of conceptions, criteria which cannot function properly in the isolation of individual reflection. In opposition to egoism Kant calls for a universalism and will settle for nothing less than the most extensive pluralism, a mode of thinking which does not regard the individual as a world in himself, but which recognizes the self as a citizen of the world.[23]

Kant also rejects egoism on the national plane when he insists on the subjection of all nations to a rule of law. Political egoism (though Kant does not use the term) involves the assumption by the state of its adequacy to be its own judge on all political questions, and the further assumption

[21] Orientierung im Denken, p. 365 : Beck, p. 305.

[22] *Idem.* This material has obvious import in the interpretation of the categorical imperative.

[23] A, pp. 12-14.

that its ends are the only ends which it need recognize or pursue. The danger toward which this sort of egoism moves is perhaps the greatest of all—the danger of war. From this form of egoism there is no escape save in the union of states in a community of law.[24]

In attempting to use the logical criteria of truth, we are thus led by reason itself to strive for the fulfilment of community, not only in politics, but in science, art, and morality. In the application of the *logical* criteria of truth, we see the unified drive of reason towards its ultimate goal—morality, and we see reason as practical at every state. Kant has not been forced to concoct arguments proving that the ultimate end of reason is the vocation of man. He has simply pointed out that without the community of men there can be no sound employment of reason and that any limitation on the totality of inclusion in this community of men is a limitation on the scope and usefulness of reason itself. Any limitation imposed on this community is likewise imposed on reason itself. For Kant there is no problem of making reason relevant to man ; there is no functioning reason apart from rational beings, and, consequently, so far as our *knowledge* extends, apart from man. Thus to talk of reason and its interest is to talk of man and his interests. They must live or die together.

Of course, there is a problem of subordination ; shall men live for reason, or shall reason serve man ? Kant never wavers in his insistence on the latter alternative—reason, like the sabbath, exists for man.[25]

Thus Kant's conception of logic and logical method is found to harmonize with and positively to support his conception of philosophy. In order to make use of the two criteria of logical truth, one is required (*a*) to think for himself—this reaffirms his conception of philosophy as rational ; and (*b*) to think in total community with others—this reaffirms the universal character of reason and its dedication, under the cosmic conception, to the end of morality. And of general importance to Kantian interpretation, we find the recognition in logic (in formal philosophy) of the ineluctable need of reason for material content in its successful employment.

We are thus driven by the method of formal philosophy to the starting point of material philosophy (metaphysics), which is the starting point of the transcendental method, and which begins with experience, with knowledge as a fact. Kant never puts himself in the position of asking " Can there be knowledge ? " He knows that philosophers who ask this question do not answer it. Furthermore, since philosophy gains its knowledge discursively, it cannot start in a vacuum devoid of concepts to be examined, discussed, or related. Since, like Socrates, Kant realizes that the nature of philosophy is discursive, he can go no further without the primary acceptance of knowledge as a fact than Socrates could go without the presence of a person wise (or foolish) enough to make an assertion.

[24] Zum ewigen Frieden, p. 439 ff : Beck, p. 316 ff.

[25] " These highest aims [of pure reason] must, from the nature of reason, have a certain unity, in order that they may, as thus unified, further that interest of humanity which is subordinate to no higher interest ". (KdrV, B826 : Kemp Smith, p. 631 ff).

This initial affirmation of knowledge is Kant's point of departure in each of the *Critiques* and in the *Foundations*. In the *Critique of Pure Reason* Kant first justifies the question " How are the sciences of pure mathematics and of nature possible ? " Then, pursuing immediately the conditions of their possibility, he remarks that " Since these sciences actually exist, it is quite proper to ask *how* they are possible ; for that they must be possible is proved by the fact that they exist ".[26] We start then in the *Critique of Pure Reason* with the givenness of mathematics and physics. Both sciences contain or presuppose necessarily true propositions whose truth is supplied in part by reason and in part by experience, but whose truth is not derived from experience.[27]

Kant is somewhat embarrassed by his next question, " How is metaphysics possible ? ", for he realizes that the reality of metaphysics may be in doubt. In the first *Critique* he says metaphysical knowledge is given in experience either as a science or as a disposition of human reason to ask ultimate questions. So even if we refuse to regard any of the answers to metaphysics as scientific, we must still confront and accept the reality of metaphysics as consisting of the metaphysical questions which reason asks when it probes the possibility of metaphysical answers. The question " How is metaphysics as a science possible ? " cannot properly be asked or answered until we have seen how synthetic *a priori* judgments are possible ; but when this is accomplished, the reality of metaphysics is assured and the question can then be asked of it.[28]

The starting-point of Kant's method is essentially the same when he comes to the examination of morality. Here Kant proposes to begin with man's common moral experience and proceeds to the formulation of the first principles of morality. He insists that it would be foolish for him or anyone else to presume to have invented morality (although he does hope to offer a formula for it).[29] He assumes that morality is one of the actual facets of human life and that it must be accepted as such. Hence Kant can employ man's common knowledge of morality as the starting-point for his transcendental method.

We are not to suppose, however, that Kant intents to use moral examples as the foundation of his ethics. Morality, according to Kant, cannot be derived *a posteriori* from experience ; hence, each supposed example of good moral conduct, including even the example of Jesus, must be judged by *a priori* principles of morality in order to determine whether or not it provides such an example.[30] Consequently we can never encounter a moral example as a fact of experience. Nor does Kant believe that the common man is in possession of infallible judgment in the determination of morally

[26]KdrV, B20 : Kemp Smith, p. 56 ; cf. Prol, p. 29 ff. : Carus, p. 31 ff.

[27]Prol, pp. 23-4 : Carus, p. 25.

[28]KdrV, B19-23 : Kemp Smith, pp. 55-7 ; Prol, pp. 24-29 : Carus, pp. 26-31. (Kant also considers metaphysics essential to reason, cf. KdrV, B18).

[29]Gr, p. 240 : Paton, p. 60 ; KdpV, p. 9 : Beck, p. 123.

[30]Gr, p. 266 : Paton, p. 76.

good actions on which the analysis of morality can be based. Rather, the moral knowledge of the common man, which is the 'fact' upon which moral theory must be constructed, is merely his knowledge of the nature of morality in general. This basic 'fact' of morality is found to be man's consciousness of obligation in which

> the moral law is given, as an apodictically certain fact, as it were of pure reason, a fact of which we are *a priori* conscious, even if it be granted that no example could be found in which it has been followed exactly.[31]

This is where Kant begins. Just as science is possible because scientific experience is actual, so morality is possible because moral obligation is actual.

This interpretation of the starting point of Kant's method in morality will not suit all students of Kant. Many will no doubt agree with Schopenhauer that

> Kant does not represent the alleged moral law *as a fact of consciousness* capable of empirical proof—which is how the later, would-be philosophers, both individually and collectively, wish to pass it off. In discarding every empirical basis for Morals, he rejects all internal, and still more decidedly all external experience.[32]

Schopenhauer is right to insist that Kant does not say that an "empirical" proof of the moral law is possible. But Schopenhauer is mistaken if, as he seems to, he rejects the reality of moral obligations in inner experience as the primary fact in ethics. Kant insists that we are conscious of the moral law (i.e. have some sort of experience of it) apart from sensible experiences. Schopenhauer refused to recognize the possibility of one's being conscious of something that is not sensible; and since Kant often identifies phenomenal experience (sensible experience) with Experience as such, it is not surprising that Schopenhauer should have made this mistake. But we should recognize that only a very small part of our conscious awareness is sensory or phenomenal in this sense. Subjective experience (mere consciousness) teems with material that can never be phenomenal, material which is not empirical but is derived subjectively from concepts or from the depths of the noumenal self. It is true that the actual, temporal state of mind in which one is aware of moral obligation is an empirical state—but the components of this state are not all of empirical origin. Kant is free, then, to insist that the moral law is not an empirical fact but "the sole fact of pure reason, by which it [the law] proclaims itself as originally legislative".[33] This fact, Kant insists, is indubitable. To reassure oneself of it:

> One need only analyze the sentence which men pass upon the lawfulness of their actions to see in every case that their reason, incorruptible and self-constrained, in every action confronts the maxim of the

[31]KdpV, p. 53 : Beck, p. 157.
[32]Schopenhauer, A., *op. cit.*, pp. 43-44.
[33]KdpV, p. 36 : Beck, p. 143.

> will with the pure will, i.e., with itself regarded as *a priori*, practical, and this it does regardless of what inclination may say to the contrary.[34]

Common sense can justify morality because, when we are aware of the moral demand, we are aware that it casts aside all our empirical desires and inclinations as incapable of determining what we *ought* to do. This is the empirical awareness of that which is not known empirically.[35] In full consistency, then, Kant appeals to the consciousness of the moral law as the foundation of morality without resting morality on an empirical footing.

Thus Kant's method in ethics parallels that used in the first *Critique*; he begins with the reality of experience (not, however, in the sense of *Erfahrung*, which in the first *Critique* usually refers only to cognitive experience) in the area under inquiry.[36]

In the field of artistic taste we find a continuation of this general methodological pattern. Kant begins once again with the actuality of a given aspect of human life into the nature of which he is inquiring. And although in matters of taste we cannot speak of knowledge in its usual sense, since judgments of tastes are strictly speaking non-cognitive, nevertheless, we must recognize the characteristic of necessity in aesthetic judgments as a part of the initial fact in this area of inquiry. Judgments of the beautiful are not matters of individual whimsy, for aesthetic judgments cannot be merely reports of agreeable sensations. In the reality of aesthetic experience we confront feelings of pleasure and pain which, since they result not from mere sensation but from the free play of the imagination with the understanding, are demanded of (if not shared by) all men, that is, all rational beings with sensibility of the sort we have.[37]

Kant always starts, then, in the areas of science, morality, and art, from the foundation of human experience, knowledge, conviction, and judgment.[38]

In following the method of material philosophy (metaphysics) Kant faces the basic question: How is this knowledge and experience which we have possible? This question, following as it does on the heels of the assumption of the reality of that knowledge and experience whose possibility is to be explained, provides the material foundation for the transendental method and, in addition, reveals its essential structure.

[34] *Idem.*; cf. Theorie und Praxis, Part I.

[35] *Ibid.*, pp. 100-101 : Beck, pp. 197-8.

[36] This parallelism is, of course, not perfect. For example, Kant sometimes seeks to offer a transcendental deduction of the moral law, whereas usually he uses the awareness of this law as the foundation for a transcendental deduction of freedom (Gr, p. 277 ff. : Paton, p. 86 ff.; KdpV, p. 53 : Beck, p. 157). For an excellent discussion of this question see Paton, H. J., *The Categorical Imperative*, pp. 28, 202-205; cf. Kemp Smith, N. K., *A Commentary on Kant's Critique of Pure Reason*, pp. 272-3.

[37] KdU, pp. 281-2, *passim.* : CoaJ, pp. 50-1 *passim.*

[38] It is interesting to note that he did not do this in religion. To find the answer to this apparent breakdown in Kant's application of the transcendental method would be a long and difficult task, and since it is not essential to our present study, we shall have to content ourselves with the noting of this important exception.

The logical structure of the transcendental method is an adaptation of *modus ponens*. Take for granted the actuality of A; then by philosophical analysis show that B is required for the actuality of A, thereby showing the necessity of B. This method is transcendental in both a negative and a positive way. It is positive in establishing the necessity of conditions and principles of the reality of whatever is given at the outset. It shows certain factors to be necessarily presupposed by the given knowledge or experience. It is negative in that the conditions and principles which are found to be necessarily presupposed by the directly given experience or knowledge are not themselves directly observable either in pure or empirical intuition.

In practice, the transcendental method, while remaining structurally constant, is differentiated into two modes—the analytic and the synthetic—depending on what is assumed as the given, i.e., as the reality which serves as the point of departure. The transcendental method begins either with the question, "How are synthetic *a priori* judgments possible?", or with the question, "How is experience possible?". The method that stems from the first question is called the analytic, the one stemming from the second synthetic. "The analytical method", Kant says, "so far as it is opposed to the synthetical [method] . . . signifies only that we start from what is sought as it were given, and ascend to the only conditions under which it is possible".[39] Beginning with the reality of synthetic *a priori* judgments, the analytic method ascends to the conditions under which their possibility can be understood. The synthetic method, on the other hand, asking the broader, more fundamental question "How is experience possible?" ascends to those conditions by reference to which we can understand the possibility of experience itself and, in addition, explain the actuality of synthetic *a priori* judgments.

If the analytic method were the only method that Kant employed, and if Hume and his followers were justified in denying the possibility of synthetic *a priori* judgments (on the score that science offers only laws of empirical generalization, and mathematics only analytic propositions), Kant's position would indeed be indefensible, for the very foundation of his analytic argument, namely, the reality of synthetic *a priori* propositions, would have been properly denied.

Kant's analytic method is, however, supplemented by his synthetic method. When he uses the latter method (which is not differentiated by structure from the former) Kant does not start by assuming the validity of synthetic *a priori* judgments. He begins, instead, with the fact of experience. In its resultant analyses of experience, the synthetic method leads to the determination of the fundamental compositional elements of knowledge and the conditions which generate it. From these elements and conditions it is then possible to deduce the *a priori* principles which are necessary to sustain the scientific enterprise, even if one refuses to accept any law of science as a synthetic *a priori* judgment, and even if one refuses to acknow-

[39] Prol, p. 25 : Carus, p. 27.

ledge that scientific method is in any way dependent upon synthetic *a priori* conditions.[40] The synthetic method is thus seen to have greater power than the analytic method, since it is able to provide the starting-point for the later method.

(To be continued)

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[40]See Arthur Pap's book, *The A Priori in Physical Theory*, p. 63 ff. Pap offers an interpretation of Kant's category of causality which preserves its synthetic *a priori* character while showing its continuing validity and usefulness for scientific inquiry. Although Pap does not hold that Kant's formulation of the causal principle is adequate, he does hold that synthetic *a priori* principles are necessary to the functioning of science. He would not argue that any specific principle is necessary. But his insistence that science necessarily depends upon the employment of some such principles as functionally necessary, commits him by implication to the view that synthetic *a priori* principles, as such, are transcendentally necessary and hence that the starting point of Kant's analytic method is adequately secured. See KdrV, B5, B218 : Kemp Smith, pp. 44-5, 208 ; Prol, pp. 47-8 : Carus, p. 54.

PROPOSALS ON THE LOGIC OF AESTHETIC JUDGEMENTS

The usual hurdle in the way of any comprehensive account of aesthetic judgment is the comfortable pronouncement, " de gustibus . . .".[1] In Kant's *Critique of Judgment*, an interesting quibble upon this precept is introduced, only to be immediately stifled by systematic considerations. Kant says[2] that we can " contend " about aesthetic differences though we cannot " dispute " about them. For reasons of weight in his entire philosophy, though not necessarily for the sake of aesthetic questions themselves, Kant wishes to admit that judgments of taste depend on a concept but on " a concept which does not afford any proof of the judgment of taste ". A good use can be made of Kant's distinction between ' contention ' and ' dispute ' if we loosen their meanings somewhat and consider analogous problems in domains other than aesthetics. I am persuaded that we do ' contend ' more than we ' dispute ' in disagreements on matters of aesthetics and that such quarrels are able, on presentation of distinctive evidence, to be suitably settled. An essential part of " de gustibus . . ." can be admitted within the scope of this distinction and yet without attaching to aesthetic judgment the stigma of being ' merely subjective ' (as seen in Kant's own account). The feature of the manoeuvre is simply this : statements bearing properties very much like those of aesthetic judgments are found in fields respectably titled sciences. And procedures are available there, weaker than the full requirements of empirical truth, that entitle us to speak of some sort of confirmation. If this is so, it may be argued by analogy that aesthetic judgments have their own assignable discipline and that the admission of apparently contrary judgments on a given work of art (which is the most puzzling feature of critical descriptions of particular works) need not, in itself, prejudice the objective and public status of these judgments. I believe it can be further argued that the comparison serves to strengthen the logical basis of common, widespread usage in aesthetic disagreements; it is in fact just such usage that demands explanation.[3] I wish to draw attention also to the fact that the argument proposed rests on the weakest

[1]This paper was presented at the Fifth Interamerican Congress of Philosophy and the Second Congress of the Sociedad Interamericana de Filosophia (July 8-12, 1957), Washington, D.C.

[2]Immanuel Kant, *The Critique of Judgment*, trans. James Creed Meredith (Oxford 1952), § 56.

[3]A recent statement by T. S. Eliot may serve to exhibit the prevalence of admitting alternate and even incompatible critical descriptions of a work of art. Eliot, as a living poet and an influential critic, is in the novel position of commenting on the admissibility of interpretations of his own poetry that do not agree with his own intentions as a poet or with his comments as a practising critic upon his own poetry. Cf. " The Frontiers of Criticism ", *Sewanee Review*, Vol. 64 (Fall 1956), 525-543, particularly 526, 538.

possible grounds that may be granted without giving up all hope of a successful account of the confirmability of aesthetic judgments. I have restricted my discussion therefore to the question of the cogency of such a way of speaking about art without attempting to construct any explanatory models for aesthetic criticism.[4]

In the natural sciences, to turn to instances, one sometimes asks : " How was our solar system created ? ", " How was the moon formed ? ", " How did life originate ? ", " Are all the races of man descended from a common stock ? " At the present stage of our researches these questions must be adjusted somewhat. For " How was our solar system created ? ", we substitute " How could it have been created ? " For " Are all the races of man descended from a common stock ? ", " Is it conceivable that they originated from different evolutionary lines ? " Questions of this sort do not involve contrary-to-fact conditionals. The answers afforded are such that the consequent of our conditional is true (the description of our present solar system, for example) and the antecedent is meaningful but incapable of practical verification. We imagine, frankly, a set of initial conditions, compatible with known laws of nature and operating in accord with selected suitable laws, by means of which we attempt to explain certain properties of our present world. Some accounts, say, Buffon's hypothesis or the Kant-Laplace hypothesis, may be demonstrably false even though the true account is as yet unavailable. And, in the absence of a true answer, others may be entertained which are in accord with preferred causal models and do not violate any relevant facts.

What is logically most interesting about such answers is that they would ordinarily be contraries ; if one were true, the others would have to be false. But since, by hypothesis, they cannot yet be confirmed in practice, it is possible to assert them jointly—not as *true* but as *plausible*. In the domain of the questions previously raised, it is possible to gauge degrees of plausibility to some extent.

Let us mention some distinctions between the true and the plausible. First, we invoke plausibility only when we cannot actually determine truth. Second, no plausible account can contradict any proposition established as true. Third, plausibility applies to all types of statements to which truth applies, but the contrary does not accord with general usage. Fourth, neither true nor false statements may be viewed as merely plausible, and implausible statements may yet prove true or false. Fifth, where the statements ' P is true ' and ' Q is true ' are contraries, the statements ' P is plausible ' and ' Q is plausible ' are not contraries. Sixth, statements are plausible in virtue of their use of preferred explanatory models in any given domain ; and when such models may be weighted as to preferability and

[4] I have explored the question of such models in a paper, " The Problem of Relevance in Esthetic Criticism ", presented at the annual meeting (December 27-29, 1957) of the American Philosophical Association (Eastern Division) at Cambridge, Mass. The paper is forthcoming in the *Bucknell Review* and abstracted in the *Journal of Philosophy*, Vol. LIV, No. 24 (November 21, 1957), 793-794.

the properties of the phenomenon to be explained also weighted, the corresponding statements may be weighted as to plausibility. Plausibility then provides determinate values for a range of statements otherwise indeterminate as far as truth and falsity are concerned.

We shall find it useful to identify disagreements which Kant calls "disputes" with questions of truth and falsity and those he calls "contentions" with questions of plausibility. How could we apply these distinctions to aesthetic judgments?

Much depends on how we view aesthetic judgments. Also, granting the obvious relationship between such judgments and works of art, our application of the above distinctions may very well presuppose a distinct theory of the art object. There is no point in blinking the fact, but it may be possible to identify some *minimal* properties both of works of art and of aesthetic judgments which are little open to dispute and would suffice to support our thesis. I offer the following as items in such a list.

1. A physical system functions as a work of art if its particular properties result from deliberate human work and can be construed as serving some unified human goal.

2. A physical system functions as a work of fine art if the goal in terms of which its properties are construed is mere design, that is, if the organization of its properties can be construed as inherently purposive without reference to any ulterior goal.

3. A physical system viewed as fine art may also be viewed as useful art, that is, as serving some human goal other than mere design.

4. A physical system viewed as useful art may also be viewed as fine art.

5. Use may be an element in the design of a work of art.

6. Design may be an element in the use of a work of art.

7. Every work of art can be denoted, though not described, by an assignable set of physical properties.

8. At least some physical properties may serve as *prima facie* evidence that a particular system functions as a work of art.

9. In terms of experience, the property of functioning as a work of art is a stable dispositional property, the power of a physical system to appear to human perceivers as a purposively organized system.

10. To describe an object as a work of art is to describe its physical properties and to impute to it a unified human goal which its properties may consistently be viewed as fulfilling.[5]

11. To confirm a description of a work of art is to test the public availability of the dispositional properties imputed to a physical system.

12. To evaluate a description of a work of art is to determine the correspondence of its critical method with a preferred critical model or principle.

13. To evaluate a work of art is to determine the correspondence of its

[5] I have restricted the account here to the least controversial arts. The literary arts may be accommodated minimally by acknowledging that physical 'marks' may be predisposed as conventional signs and (in the case of fine art) design may be imputed to such signs.

purposive organization with a preferred model or principle of such organization.

We shall want to see how the notion of the plausible applies to fine art thus conceived. Let us introduce the terms ' decision ' and ' intention ' to facilitate our argument. A ' decision ' is an element of a physical system construed as contributing to the artistic purpose imputed to that system. Therefore, a work of art can be defined as a coherent system of ' decisions '. An ' intention ' is the alleged plan by which a human being produces a work of art. Therefore, the statement of an ' intention ' is either a proposed description of a work of art or a prediction of how it could be described when completed. There is otherwise nothing privileged about the statement of a mere ' intention '.[6]

Descriptions of works of useful art are particularly easy to test. An ulterior goal is assigned to a physical object ; its elements are interpreted as ' decisions '—for example, levers, conveyor belts, separators, etc. ; the system is put in motion and one observes merely whether or not the physical system (which, in terms of useful art, we can now call a ' machine ') actually produces the results specified in its imputed goal. If it does not, the description offered is false ; and if it does, the description offered is true. The stated ' intentions ' of artists and inventors are usually quite helpful here ; the purpose of complicated machinery may, without the inventor's plan, be extremely difficult to identify. We may wish, further, to judge the economy or efficiency of a ' machine ' (that is, we may wish to evaluate a ' machine '), but that presupposes an adequate description of it. In brief, in describing a work of useful art, we merely substitute the language of means and ends for cause and effect ; and our tests of proposed descriptions are causal tests construed in that other language. It is of course possible, in principle, that a ' machine ' may serve multiple purposes ; these may, alternately, be regarded as parts of a comprehensive purpose. On any view, however, these must be compatible ; the causal form of the description of useful art makes this necessary.

Fine art does not lend itself to simple handling. The signal feature of fine art which makes the extension of our remarks on useful art difficult is the absence of an assignable goal which the ' decisions ' of a given system may be said to serve as means to an end. In fine art, the ' decisions ' are constitutive of a purposive system ; that is, the relationship between ' decisions ' and artistic function is not causal, though causal questions are relevant. To be sure, a work of fine art may serve some ulterior use, as when we say a painting produces pleasure in a perceiver or as when Freud or Jung insists on a compensatory role for fine art in the economy of the psyche. But the one function cannot be confused with the other, no matter how closely they may be related in experience. In useful art, the relation between ' decisions ' and purpose is ultimately merely causal—hence practical tests of success and achievement of purpose are adequate in examining

[6] Cf. W. K. Wimsatt, Jr., *The Verbal Icon* (Lexington, 1954).

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proposed descriptions of particular systems. In fine art, the relationship is one of a total design to its constituent parts; we cannot say that the 'decisions' serve the design in a causal sense, because the design, unlike the use, of a given system is nothing more than the coherent internal order of the 'decisions' of that system. To appreciate this feature of fine art is to appreciate the impossibility of testing critical descriptions by a criterion of work performed and to begin to see as well why, if fine art is the kind of thing it is, we are prepared to confirm even contrary descriptions of particular works.

In some works of fine art of course use is itself an element of design and facilitates the description of design. If, for instance, the comprehensive use of a building were determined, the parts of the physical plant could be construed as 'decisions'. And if its use be taken to be an element in its design, the set of 'decisions which makes it useful would have to be incorporated into the set of 'decisions' which gives it design. Thus, the ease with which we may determine the use of a system may help considerably in confirming descriptions of its design. In fact, what frequently happens in the critical evaluation of architecture (where, normally, the two types of functions are jointly engaged) is that the use of a building or buildings is confirmed and analysis shows that the description of its design cannot be made coherent with the description of its use. Mr. Lewis Mumford's early articles on the United Nations complex illustrate the effectiveness of such a critical procedure.[7]

One must still concede that the description of the design of a system is not deducible from a description of its use. If, say, on Artisotle's view, a tragedy may serve the ulterior use of purging the emotions, it is the antecedent design of a particular tragedy that effectively serves this end as a means. If, say, Joyce's *Ulysses* may serve to stimulate independent pornographic fancies, the practice of criticism shows that we can attend instead to the design of the novel. Or, if the use of a building is part of its design, we cannot presume that the description of its design is exhausted in a description of its use. The question then of confirming descriptions of design remain.

We may make a fresh start if we consider the so-called performing arts (where, characteristically, the most difficult puzzles are to be found). Let us anticipate some difficulties by introducing the terms 'performance' and 'instrument'. A 'performance' is a work of art viewed in the process of actual production. It makes no difference whether the physical activities of the human system are themselves described in terms of design (e.g. acting, dancing, singing) or whether they are merely causally responsible for a physical system viewed independently in terms of design (e.g. playing the piano or the violin). Let us call the physical system that supplies the specific

[7]Lewis Mumford, "The Skyline", *New Yorker*, Vol. 23 (October 25, 1947), 56+; Vol. 23 (November 15, 1947), 102+; Vol. 27 (September 15, 1951), 84+; Vol. 27 (September 22, 1951), 99+; Vol. 28 (January 17, 1953), 83+; Vol. 29 (March 14, 1953), 72+.

materials used in a ' performance ' an ' instrument ' or set of ' instruments '.

We sometimes wish, to consider the application of the terms, to compare a Toscanini and a Furtwängler ' performance ' of Brahms' *First Symphony*. There is a musical score which they share in common ; it is at least a description of the ' instruments ' on which any relevant ' performance ' would depend ; it may also provide us with clues about the original composer's or later editor's ' intention ' respecting any ' performance '. We also infer from the actual ' performance ' that the human agents involved have their own ' intentions ' respecting that ' performance ' ; and since ' performances ' vary (as with Toscanini and Furtwängler), ' intentions ' vary with respect to the same score. To prefer one or the other ' performance ' is to evaluate the two in terms of some antecedent model or principle. Short of this, I hardly think one would wish to deny that the significantly different ' performances ' of Toscanini and Furtwängler exhibit coherent design, while at the same time they employ the same ' instruments ' identified in the score. (We may add, parenthetically, that some changes in ' instruments ' may have a negligible effect on the identity of a work of art.)[8]

Because of the role of the human agent, ' performance ' may be treated not only as a work of art but as an ostensive description of a work of art (that is, what we ordinarily call a ' demonstration '). It is as if Toscanini not only produced his version of Brahms' *First* but said in effect : " This is the way in which I would interpret the score ". One might, after hearing the Toscanini ' performance ', ask, " What if Toscanini had included in his total ' performance ' this (' demonstrated ') treatment of the themes of the *Symphony* ? " In asking such a question, we are not interested in the result of mixing the new interpretation with elements of the old. No, what we are interested in is the possibility of reorganizing the entire ' performance ' based on the same score and on a new ' intention '. What we should have to wait for then would be, say, Furtwängler's ' performance ', that is, a new design in which the changes could function coherently as ' decisions '. *The* work of art could not be both, if we apply the models of truth and falsity ; but the *Symphony* could *plausibly* be said (and ' demonstrated ') to be either, if the design of both performances could be shown to be plausibly imputed to their common score. And this is in fact precisely what we wish to examine in such arts. We are even prepared to anticipate additional novel interpretations of a score. The fact that some listeners may be partial to one ' performance ' or another, while other listeners may enjoy hearing several alternately, is an index of different evaluative schemes. That these may intrude in the mere description of a design no one need deny ; they may, however, be distinguished in principle. So that, although two persons may champion different ' performances ' of the same score, it is conceivable that the confirmation of the two as plausible be neutral to the evaluative principles entailed in either preference.

[8] I am aware that the discussion pivots on this question of the identity of a work of art. I have treated it in a paper, " The Identity of a Work of Art ", *Mind* (January 1959). I suggest, as a preliminary solution, however, sufficient for our present purpose, that a common score at least can be identified.

We shall find analogies for our notion of ' performance ' as ' demonstration ' in the rest of the range of fine art (and hence, further need for the concept of the plausible). Ordinarily, one does not think of a novel or a poem as a ' performance '. I suggest that a written poem or novel functions somewhat like a score in music ; each is, in one sense, a description of the ' instruments ' the description of the completed work of art would have to incorporate—' instruments ' now not merely physical but already predisposed as language ; and, in another sense (distinguished from that of musical scores), each is the actual ' instruments ' which, in the work of art, must be construed as its constituent ' decisions '. In a society that honoured its professional story-tellers and minstrels, the arts of poetry and fiction would be treated as performing arts ; in our own society they are not so treated, when the fact is that we wish to emphasize only that the performing reader need not also be regarded as an ' instrument '. But a person who discusses his reading of a poem may reasonably be viewed as describing a ' performance ' he would offer (and may ' demonstrate ') based on the ' score ' of the text. If the analogy between reading a poem and performing musically holds, it follows that one cannot in principle deny that there may be alternate plausible descriptions of particular literary pieces. That the condition of literary criticism supports this view may, I think, be amply exhibited by two random items seeking to explicate Joyce's *Ulysses*. That both are described in the same recent issue of the Yale University Press current book catalogue is, I take it, not insignificant. Their admissibility does not depend on their compatibility or ability to be incorporated into a single, more comprehensive thesis. Let me quote briefly from the descriptions of these two volumes :

> The author shows how the figure of Shakespeare comes finally to serve as both a key to an understanding of the limitations of Stephen Dedalus' attempt to live for Art alone and as a means of defining the role of Leopold Bloom. Out of these considerations he brings new insight to the central meanings of Joyce's portrait of the modern world. Two appendices provide a detailed analysis of the sources of Stephen Dedalus' Shakespeare theory and a comprehensive listing of Shakespeare quotations in *Ulysses*. Yale Studies in English, 134. William M. Schutte is associate professor of English at Carnegie Institute of Technology (*Joyce and Shakespeare* : *A Study in the Meaning of* Ulysses, by William M. Schutte).

> Father Noon investigates the extent and nature of Joyce's education in Thomism ; he studies *Ulysses* as a comic defence of the principles of Aquinas' *lex aeterna* (and concludes that it comes as close as fiction can to defending moral values) ; he demonstrates that Aquinas' defence of the Catholic dogma of the Trinity is the key to much of what is going on in *Ulysses* . . . Yale Studies in English, Volume 133. The author, a Catholic priest, is assistant professor of

English at Canisius College. (*Joyce and Aquinas*, by William Noon).[9]

Further parallels can be found in painting and sculpture. Their designation as ' spatial ' arts points to a somewhat misleading, though understandable, impression. Paintings and works of sculpture appear to be completed works of art. We have only to look at them to see what they are. The fact that poetry has, traditionally, been regarded as a ' temporal ' art suggests at least the performing role of the reader (as does also the recent vogue of recorded recitations). But if we recall, for instance, the truly interesting controversy over Brancusi's *Bird in Flight*, we must see that the physical materials Brancusi used exhibit their disposition to function as ' decisions ' only under the eye of a cultivated human being. This is, of course, roughly what we mean when we say that a work of art does not occur in physical nature but only in a human culture ; its dispositional properties are of another sort from those of flexibility and malleability and ductility. In a sense, therefore, all viewers of art are performers, playing not only on the physical properties of some particular work but on their own perceptual and imaginative equipment as well. Our interest centres on the plaster of paris and the pigments of the plastic arts ; hence we de-emphasize the virtuoso ' performance ' of an observer. But the observer will describe his ' performance ', that is, he will ' demonstrate ' the work, by identifying the dispositional properties of the piece in question. The description of a sculpture (to use the vocabulary we have prepared) is the description of the ' performance ' of the sculpture's viewer ; the ' decisions ' which comprise the sculpture's design accord with the ' intention ' the viewer imposes on his ' instruments '—' instruments ' that include generalized perceptual and imaginative equipment and the physical materials of the work viewed. The perceptual and imaginative habits of a culture permit the discrimination of plausible descriptions ; that is, we can in principle appeal to scientific accounts of perception and imagination to supply relevant models for the perception of works of art. All the paradoxes of the allegedly ' temporal ' nature of the ' spatial ' arts dissolve with the notions of ' performance ' and ' demonstration '.

The question of evaluation remains. Two cases, logically distinct, may arise. We may wish to evaluate an array of works of art and we may wish to evaluate descriptions of works of art. Let us use the term ' taste ' to refer to preference of, the assignment of measures of value to, eligible items in accord with a formulable principle. We may then speak of ' taste ' in fine art as ' aesthetic taste ' and ' taste ' in descriptions of fine art as ' critical taste '.[10] The two tend to be confused in debate. But it should be clear that we cannot coherently debate ' aesthetic taste ' unless we are agreed upon the description of particular works of art. Disagreements in the evaluation of a work of art reduce to chaos, unless there is agreement on the

[9] *Yale Books* (New Haven, Spring 1957), pp. 9, 13.

[10] In speaking of ' critical taste ', I am not speaking of estimating the plausibility of critical descriptions but of preferring, for extraneous reasons, one description among others that are relatively equal in plausibility.

description of that work. If, say, adopting the descriptive conventions of Wilhelm Worringer (disregarding his own preferences), we find that José Ortega y Gasset prefers abstractive art while Bernard Berenson prefers empathic art, the aesthetic taste of each is still obliged to be grounded on plausible descriptions of the work in question. Even if we grant that there is no 'disputing' regarding taste, we can at least 'contend' about the object of taste, that is, insure the plausibility of the description of it. Similarly, though critical taste may dictate preferences of types of descriptions, the available alternate descriptions of a work of art may, in principle, be made to meet criteria of plausibility. If, say, one prefers Ernest Jones' Freudian description of *Hamlet* to A. C. Bradley's modified Hegelian account, it is nevertheless possible to grant that the other is plausible; that is, though we do not 'dispute' about taste, it is still possible to 'contend' among alternate descriptions. Ultimately, confirmation is controlled by the description of the physical system (or such system disposed as language) to which design is imputed and by the description of admissible models of perception and imagination through which designs may be publicly available.

And so, even on the weakest assumptions, the assumption of "de gustibus . . ." and the assumption that, in principle, alternate and even contrary designs may be imputed to works of art, it does not seem to be impossible to formulate objective procedures for settling aesthetic disagreements ('contentions'). I should like to emphasize once again that the signal feature of aesthetic discourse that led us to speak of plausible, rather than true, critical descriptions, is the apparently regular admissibility of even contrary descriptions of particular works of art.

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NOTES ON THE LOGIC OF NATURAL NUMBERS

Generally speaking there are two ways of discussing the logic of any sort of number. For example, in dealing with rationals the logician could study the origin and use of fractions and the way they are applied in comparing quantities of money, an approach which might be called semantic and pragmatic ; or, like the pure mathematician, he might be interested in the syntax of calculations with rationals, in which case he would introduce fractions as ordered pairs of integers, and set up rules for applying the elementary functions of arithmetic to them in such a way that the usual formal operations on fractions would be justified. Similarly there is more than one way of looking at the natural numbers, for besides having a use and application to objects the series has also a formal structure which is naturally of special interest to the logician who is out to lay foundations for the whole of arithmetic and those branches of mathematics which are based upon arithmetic. The principal connexion between the two methods of approach is perhaps that whereas the mathematician as such is concerned simply and solely with the manipulation of symbols on paper (as formalists have always rightly insisted), this formal treatment of numbers should not be out of accord with their use and practical application. The two methods are in fact complementary, so that to treat numbers pragmatically is not necessarily to deny that there can be a valid formal presentation of them, so long as it faithfully reflects ordinary usage.

All the same, interest in the formal analysis of the number series is so strong at the present time that its applications are often practically ignored. The numbers are commonly interpreted from the start on the analogy of the pieces in a game of chess—their significance is supposed to lie in the way they may or may not be moved about in arithmetical calculations. Yet obviously their original use and application lie, not in their formal manipulation on paper, but in the process of counting things or finding out where exactly an object comes in a given row. If arithmetic is so defined that it can be said to begin only with formal calculations, then there is clearly a pre-arithmetical stage at which the child has learnt only to answer the questions " how many ? " and " in what position ? ", and does not yet know how to add, subtract, multiply or divide : the only function he is in any sense acquainted with is the successor function. The logic of numbers is as much concerned with these humbler jobs they do as with their formal properties.

Another important difference between the pure and the applied approach is that whereas the number series is useless to a pure mathematician unless it is at least potentially infinite (for even in elementary arithmetic there

have to be numbers greater than any given number so that there will exist sums and products of those which precede it), in practice the stock of numbers available could always be finite, provided that at any particular time it were large enough for our actual purposes. If a set of objects to be numbered calls for more numbers than have been constructed so far, it is logically indifferent whether we follow a rule which would generate new numbers for ever or just invent a lot of new ones and stick them on the end of the former series.

Someone may be said to have the concept of a number n only if he is able to use the corresponding numeral, not if he simply reacts differently to a set of n things and a set of $n + 1$. (Hardly anybody wants to say that a dog possesses the concept " cat ", for although most dogs show by their behaviour that they recognise a cat when they see one, they don't understand the word ' cat '). There are said to be people who can distinguish 40 from 41 objects at a glance, and everyone notices the difference between a pair and a group of three or between a thing's being second from the left and its being third from the left, but these facts will be of logical importance only to the extent that some such ability to distinguish behaviouristically can be shown to be necessary to an understanding of number signs in general. Speculations about what would have to be said if everybody could distinguish any number from any other in this way may be ruled out of order, not only because the imagined situation is so very remote from our actual situation but also because it would not necessarily involve the use of signs and symbols and therefore would not belong to the province of logic.

Unlike ordinary words, numbers are written down rather than uttered, and what we write down is more often the numerals than the corresponding words.

As to the nature of numbers, a philosopher might maintain that they are Platonic entities, concepts in the mind, or even that they are identical with the numerals (the marks composed of digits, considered merely as such). This is not the place to discuss the general problem of universals, but two general remarks may be worth making : first, if mere marks can have only physical characteristics and not mathematical properties it is unlikely that numbers are *simply* numerals ; second, it is equally hard to deny that numerals play an essential part in their logic, for whatever the metaphysical status of numbers may be, and whatever the nature of God's knowledge of them, *we* discover their properties only by manipulating marks on paper or some similar process.

Many contemporary logicians are likely to find the clue in the *use* of numerals, but this still leaves it an open question whether a number is simply the way a numeral is used or whether it is the numeral itself considered as having a known use (the latter will have physical characteristics, among others ; the former will not). The more material view seems to be Wittgenstein's as he says somewhere that the numbers are *shapes*, and it finds a certain amount of support in ordinary usage ; but of course " number " is typically ambiguous.

(*a*) It may mean a specific token which exists in a particular place at a given time (the number on my door at the moment is green and about two inches high). One does sometimes say that the *figure* seven is damaged, but we always revert to the word " number " when we want to refer to the whole numeral as something which has been put there for a definite purpose.

(*b*) It often means a type of which the specific tokens are instances. In this sense the number of a house is printed in the street directory, typewritten on some letters and hand-written on others. Naturally it cannot be said to have any particular colour, and yet to speak of one's number is only to speak of actual and possible tokens each of which must have some colour or other. Again it is possible to use a different word for the mere type-numeral (" a figure four is more angular than a figure six ") and again the figures are called numbers when in use (one says that houses in different streets often bear the same number). It seems as though a token number is just a token numeral which is being used for some numerical purpose, and a type number a type-numeral whose instances are normally used for a numerical purpose.

It is a question whether numbers, in the sense in which " three is less than five " is about numbers, are or are not the same as these type-numerals. Two reasons for believing they are not would be (i) that *being more angular than* is a very different sort of relation from that of *being less than* in the mathematical sense, and (ii) whereas all mathematicians are presumably concerned with the same numbers there are many different sets of numerals and it is mathematically indifferent whether the marks actually used are Arabic or Chinese. Thus it may be held that a mathematical number cannot be any kind of numeral, though it might conceivably be the use which is common to a variety of equivalent numerals in different notations. However, these objections are not altogether conclusive, for (i) there is no *a priori* reason why one and the same set of objects should not have both physical properties like angularity and mathematical properties, especially if the mathematical properties are of a kind that can be based upon certain types of physical characteristic, such as a standard order, and (ii) from the fact that the mathematician is not obliged to use our current numerals it does not follow that the sort of numbers he deals with are independent of numerals. The prices charged by an international firm are independent of any particular currency, but they can't be paid without using some definite currency or other (Ryle) : there is no particular language which all statements must be made in, but no one can make a statement without using some particular language ; and similarly a mathematician can't study numbers without using some set of numerals or other. The problem here is really part of a wider and more familiar problem. If, as some

logicians allege, " proposition " can be taken to mean a sentence (in the type sense) considered as having a known use, then " number " can be taken to mean a type-numeral considered as having a known use.

The child begins by mastering the numbers from 1 to perhaps 100, which is more than he needs for counting his bricks, and he comes to understand that this supply can be increased if need be. Logically his position is no different from that of an astronomer who actually uses only a finite stock of numbers, however large, and knows it can be increased if necessary. It makes no difference, again logically speaking, whether they are mastered by learning and applying a rule of succession, or whether they are learnt parrot-fashion, or simply written on a piece of paper and carried in the pocket until needed. The reasons for preferring some ways of " possessing " the numbers to others are practical, not logical.

Many things about our numbers are purely a matter of grammar or convention ; that they have the particular shapes they do have, that the system is decimal instead of having some base other than ten, or no base at all ; that we normally write them from left to right or from the top down. Others are logically essential ; for example, you begin by writing ' 1 ', then ' 2 ', then ' 3 '. . . . Of course any sizeable job of work has to be done in stages ; one paints a fence or draws a house by doing first one bit and then another, but in that sort of case it doesn't matter where you begin or end, whereas with numbers it matters a great deal. Suppose a teacher wrote the first hundred numbers on some wooden bricks, put them in a bag, gave them a good shake, and then handed them to a child. No one would say that was the best way to introduce him to them. Numbers must not come in a heap but in a row.

The series has very definite characteristics : in particular, it is always ordered by some irreflexive asymmetrical relation such as " written immediately to the right of " or " uttered next after ". More precisely, a row in the type sense is ordered by a relation " immediate successor of " which is cashed in particular token rows by specific spatial or temporal relations of immediate succession. With respect to this ordering relation the set obeys three rules :

(*a*) There is a unique member of the series which is its initial member. Formally, this member is the only one which is not the successor of any member. Practically, one begins the temporal process of generating a token row by writing or uttering this one. Additions to a finite stock of numbers must be put on the other end : as a matter of principle the last number you have reached so far can always be given a successor, but the initial one may never be given a predecessor.

(*b*) Each member, with at most one exception (the last, if the

set is finite so that there is a last) has exactly one which is its immediate successor. Thus it is provable by mathematical induction that one and the same position in the series cannot be shared by more than one number ; for by rule (*a*) the initial position is occupied by a unique number, and by the present rule every position occupied by a unique number which has a successor is followed by a position occupied by a unique number.

(*c*) Every member which is the successor of a member, that is, every member except the initial one, is the successor of exactly one member. Hence one and the same number cannot occupy more than one position in the series, and the numbers are all distinct. The initial number cannot recur because if it did it would then be the successor of another number, contrary to (*a*). And if n cannot recur neither can the successor of n, for if it did it would then be the successor of a number other than n, contrary to the present rule. Therefore, by induction, no number can recur.

In stating these rules we have not defined the natural numbers or anything distinctively mathematical at all. They characterize a certain peculiarly important kind of structure (that of a progression) which is shared by many sets of mathematical objects, by the Latin alphabet, and by the palings in my garden fence regarded as extending from North to South. The comments on the rules treat the number series as one example of this structure ; that is all.

In using mathematical induction to prove elementary consequences of the stated rules we treat the series as one to which this rule of inference may be applied, and it might be thought it should therefore be expressly laid down like the others. But if being a fit subject for the application of mathematical induction is a characteristic of a series, it is a question whether this property is independent of the rules (*a*), (*b*) and (*c*). Could there be a set of objects which satisfied these three rules but to which mathematical induction could not be applied ?

The essential feature of any series satisfying (*a*), (*b*) and (*c*) is its order. Such a sequence is said to be well-ordered.

Next, we need some actual numerals having recognisable shapes, and the simplest way of providing them is by an inductive rule :

(i) adopt ' 1 ' as the initial numeral ;

(ii) to form the successor of any given numeral n, copy ' n ' and add a ' 1 ' to the right-hand end of it.

There is no special virtue except elegance in naming only a single digit ; to lay down a similar rule for generating our current numerals one would of course have to quote the whole beginning of the series up to ' 9 '.

The idea that once this rule has been laid down a whole transfinite set of numerals springs into existence is of course entirely false. When the rule has been written down in the above form exactly one numeral, viz. '1 ', has come into existence, and each time the rule of succession is applied another

one is generated. This mode of procedure has the advantage that we can get as many numerals as we like, but by following it we shall never get more than a finite supply of them. Or, to put the same thing another way, the rule tells you how you *can* construct a successor to any given numeral if you wish, but it doesn't say you *have* to keep on constructing new ones. Adopting this as your rule is quite compatible with stopping at twenty if that happens to be all the numerals you need.

All the same, the series is not limited in the way implied by people who argue that numbers cannot have a necessary connexion with numerals because after a certain point life would be too short or the world would not contain enough paper and ink to write them down. These are not logical limitations ; it is conceivable they might not apply.

It must be borne in mind that mathematicians treat some sets as both infinite and actually existing in extension, (a thoroughgoing finitist approach causes no end of trouble with non-recurring decimals), but the level of the present discussion is too elementary to concern itself with this conception of infinity.

The same series as we have defined inductively can be acquired less formally without making the rule explicit at all. In practice the child is given a long segment of the series of numerals from which he simply *sees* how it would go on.

Peano's axiom set seems to fall between two stools inasmuch as it specifies one numeral but gives no grammatical rule for writing down the successor of a given one. If the object of drawing up an axiom set is simply to define the structure of a well-ordered set it is only necessary to lay it down that there must exist a member having no predecessor ; one cannot give an actual instance of it because there simply isn't one shape shared by the initial members of all the progressions there are. If on the other hand the object is to define a specific number series we need to be given not only the shape of the initial number but also a rule which fixes unambiguously the precise shape that the successor of a given number will have. (It is true that " S'S'1 " for example could conceivably be treated as a number, but considered as something whose existence is guaranteed by Peano's axioms this is not a number but the description of one).

Some logicians feel that a set of rules such as our (i) and (ii) should be rounded off with an axiom of closure such as " these are all the numerals ", but in fact the difference between the language of definition and the language of description makes this unnecessary. If someone who was interested in the membership of a club were to be given a lot of items of information in the form " so and so is a member " he could never be sure he knew the names of all the members until he was told so explicitly ; but if a rule is understood from the start to be the definition of the forms of the numerals it is thereby implied that nothing will be a numeral unless it is generated by this rule.

Compare the series 1, 2, 3, . . ., 9, 10, 11, . . ., 99, 100, 101, . . . with

the potentially infinite alphabet a, b, c, . . ., y, z, aa, ab, . . ., zy, zz, aaa, aab, . . . Both satisfy rules (*a*), (*b*) and (*c*), and each could easily have rules similar to (i) and (ii) laid down for generating it, but the first is the number series and the second is not, so it isn't satisfying either or both of these conditions that makes a sign a number. Yet one feels it would be very easy to give a sense to the sentence " there are *g* cups but only *f* saucers to put them on "—if, that is, the alphabet were given the use and application which conventionally belongs to the other series. It is simply usage to say *d* is the 4th letter of the alphabet, and not usage to say 4 is the *d*th member of the other series. Of all well-ordered series, actual and possible, one is conventionally set aside (Wittgenstein would say " like the metre rod in Paris ") as the standard measure of all well-ordered series. A sign is a number, then, if it belongs to a well-ordered series which is used for specifically numerical purposes, that is, for answering the questions " how many ? " and " in what position ? ".

Instead of seeing ordinals and cardinals as different things that happen to be referred to by the same set of numerals, we may apply Occam's razor and regard them as the same set of numerals considered as having two distinct kinds of use and application.

Syntactically a number goes with a predicative phrase. Frege's now famous point could be made by saying it is useless to indicate a book and ask how many things there are there : the answer will be different according as you mean books, pages, words, or letters. Similarly, it would usually be very imprecise to talk about " the second thing my eye falls on as I look round the room ", for if my eye falls first on the table top and then on a leg of the same table it isn't yet clear whether the leg is to count as the second thing or only as the first thing cropping up a second time. Of course the context often makes it clear what kind of thing is meant by " thing ", but there must be a predicate, either expressed or understood, to make it clear in what series the object referred to occupies the position attributed to it. A man can't *just* be third ; he has to be the third person to swim the Channel or something of that sort.

A difficulty arises if we say without further qualification that numbers are attached to predicates, for predicates notoriously have a penumbra of vagueness in the sense that borderline cases are always possible in principle and often exist in fact. Suppose " P " is a predicate whose instances form an ordered set, and in this series it is known that *a* would precede *b* if *a* were a P, but we cannot be certain whether it is so or not. Then no one can assign a definite ordinal to *b* or a precise cardinal to the set of all P's. Consequently the predicate that goes with a number sometimes has to be defined, or more sharply defined, until it is precise enough to eliminate any ambiguity for the particular purpose in hand (which is not to suppose that any predicate can ever be made absolutely watertight). E.g., when a doctor prescribes

5 drops of a certain liquid, " drop " in this context has to be interpreted to mean as much as will fall by its own weight from the glass plunger provided with the bottle. Scientific concepts such as length, temperature, mass, are the least troublesome in this respect as their units are very precisely defined.

Numerals have degenerate uses apart from their normal functions. For example they are really a kind of brief proper names when assigned to the runners in a race before starting, or to military units, bus-routes, or convicts. In all such cases there need be no general principle about the way they are allotted, and logically they might as well be replaced by any other sort of sign as their function here is simply to distinguish and identify the objects labelled. It is worth noting that only in this sort of use do the individual numerals become altogether independent of the rest of the series.

A different kind of degenerate use is the labelling in sequence of gappy series, such as library books, some numbers being left out so that they will be available for later acquisitions to be put into the gaps. Here they are ordinals of a sort (for their purpose is to create an order), but it is not in general the case that the object labelled ' n ' is the nth in the row.

As in the example of the library books, we very commonly assign ordinals to objects so that it will be easier to give a definite procedure for finding a given member of the set once its number is known. There is obviously a difference between searching for a house which bears a number and looking for one which has only a name without a number.

No ordinal stands alone : logically each is intimately bound up with the others, especially those which precede it in the standard series. " 1st ", of course, looks forward to at least one successor. You do not understand an ordinal number n until you either know how the series goes up to n or else know the equivalent of n in another series (a different notation) and also the position of its equivalent in the series to which this belongs (cf. " Friday "). Position in the series seems to be fundamental, for it will be remembered that the numerals considered merely as such were ordered from the start. A numeral ceases to be a mark pure and simple and becomes an ordinal number when it is used as the name of a position in a well-ordered series.

Is the initial ordinal 0 or 1 ? As soon as we get to the arithmetic of signed integers 0 will obviously be needed as the solution of equations of the form " $n + x = n$ ", but should it come in at the present stage ? The usual assumption is that it should, and this has the support of some uses of zero in mathematics : for example, the members of an infinite series are often denoted by " $x_0, x_1, \ldots, x_i, \ldots$ ", where the suffixes are obviously ordinal. On the other hand, this conflicts with ordinary usage in other ways ; for if 0 is the first ordinal 1 is the second and 2 is the third, which sounds rather unsatisfactory. In fact, the initial member of a set of things to be numbered is in ordinary language always called the " 1st ", not the " 0th ", and in general n is the nth member of the ordinal series.

In the application of ordinals to objects it is clear they may either be used to mark an order which is already given independently in some way—as for example in numbering the storeys in a skyscraper, or else to create an order which did not previously exist, as when a set of office files have arbitrary numbers assigned to them and are then arranged in the numerical order so created.

Ordinals are independent of cardinals in the sense that the former can be assigned to the members of a class before it is known how many members it has. In particular, ordinals are often assigned to the members of " open " classes (those to which new members are continually being added, so that the sequence may come to a stop at any finite number not yet used, or again may be endless), for example, the years of our era. The only doubt that can conceivably arise in this matter is whether the ordinals are independent of the particular cardinals 1 and 2, but we shall return to this point later.

Suppose we want to impose a well-ordering on a class of things by means of the ordinal numbers. Unless the class is extremely small its members must either be perceptible objects or be represented by perceptible objects. (Character traits or types of political constitution might be said to *exist* whether or no we have symbols for them, but they cannot be ordered or counted until we produce some signs to represent them).

A class could not be ordered if it were one indistinguishable continuum. We have first of all to be able to pick out one member of it at a time, an operation which is easy enough with material objects, less easy with things like shades of colour. Next, in order to progress with the ordering we have to be able to make the transition from the one just numbered to the next one, and this presupposes the ability while recognising the unity of each to distinguish between them. Both presuppositions have in fact already been made in the case of the numbers themselves, for from the start we have to recognise 19 as one number and not two, and also recognise it as different from 18. Further, besides recognising the unity of each member and the difference between distinct members of both the set of numbers and the set of objects, we have to correlate the two sets in such a way that each object is given one number and no more and each number is assigned to one object and no more. The normal procedure of course is to write or utter instances of the numbers in temporal order. In virtue of the properties of the series the same number cannot occur a second time, so that it is only necessary to make sure none of them is left out. The biunique correlation is achieved in a particular instance by labelling the object with an instance of the number (where uttering the number as the object is touched or any similar action counts as labelling) and seeing the whole percept so formed as composed of one number and one object. That no object is numbered twice is usually ensured by some such device as having all the objects in a heap on the left at the start and moving each as it is numbered to form a new heap on the right. The logical essence of the procedure is that the objects, like the numerals, are well-ordered.

In this connexion Intuitionists have sometimes talked about fundamental intuitions of oneness and twoness, and it can hardly be denied that to see one's field of vision as composed of two distinct objects is both psychologically different from seeing it as one undistinguished mass, and absolutely necessary to the numbering process. If the oneness and twoness which are involved here are in fact the cardinal numbers 1 and 2, then the application of ordinals presupposes these particular cardinals.

A cardinal number is a numeral as used to answer the question "how many?". It is a measure of a special kind of size or length. If we begin by asking how one normally finds out how many objects there are in a set, or how it is verified that a given cardinal number applies in a particular case, the answer can only be that it is done by the temporal process of counting. The act of counting begins and proceeds exactly like the assignation of ordinals to things; the numbers are taken in the order in which they are generated, the objects or signs representing them are well-ordered, and the two series correlated by constructing a percept seen as a correlation of the initial number with the initial object, then the next number with the next object, and so on; only this time the process must reach the end of the set, so that there has to be some means of telling when the set of objects is exhausted. Finally, the last number reached in the process is taken as the required cardinal.

With regard to the act of counting itself one thing deserves stating with emphasis: we have no warrant to assume there *exists* a one-to-one correlation between a given class and the set of numbers used to number it or any similar set. In certain cases it is already there, but as a rule the correlation is something that is set up, invented, created or made by us as the act of numbering proceeds. A one-to-one correspondence is not usually something which we find already in existence, and the statement that two sets are similar is best understood to mean simply that they *can* be so correlated (Waismann).

If the process of counting or something logically similar is a necessary part of the verification of cardinal number statements ("there are n so and so's") it seems that a cardinal number, like an ordinal, cannot be understood by anyone who doesn't know how the series goes up to the given number, and that here too the class of things whose number is to be ascertained has itself to be ordered; they must be counted in some order or other. In fact, it looks as though ordinals are logically prior to cardinals, except perhaps the very smallest. At least, it has sometimes been maintained that during the process of counting the numbers are used as ordinals, and that the cardinal number of a set simply means the last ordinal reached in counting all its members.

Now we speak of *the* cardinal number of a set, thereby implying that one and the same set cannot have more than one cardinal number. Consequently anyone who agrees to the definition of its cardinal number as the last ordinal reached in counting it has to presuppose that we are bound to reach the same last ordinal whichever order the members are counted in.

This might seem too obvious to be worth stating, but like some other principles which are absolutely obvious to common-sense its precise logical status is slightly obscure. It doesn't look like a tautology, and may not even be logically necessary if it should prove not inconceivable that people engaged in counting a set of objects might get different results according to the order they counted them in. In a queer sort of way one does seem to be able to imagine this happening.

Wittgenstein has a remark about counting which may help here. He says there couldn't be such a thing as counting if we didn't find in practice that people counting things normally agree on the result or discover a reason for it if they don't agree. What was first found to be true in fact is now built into the logic of ' counting '. It was first found as a matter of fact that competent tellers counting reasonable quantities of things don't run into irresoluble difficulties, and the principle that such things do not occur was then elevated to the rank of a logical truth, so that persistent disagreement between the results of counting a set of things is now taken as positive proof either that the tellers are making mistakes or that the composition of the set is changing during the process of telling. This suggests a possible solution to the problem about the logical status of the principle that the same last ordinal is reached in whatever order the numbers are assigned to the objects, if it is understood that each person counting takes the things in a different order. We could say that the principle is first found to be true in fact, and that it is then made into a logical truth by our speaking of " *the* cardinal number of the set ", which treats the possibility of more than one result as inconceivable.

Few contemporary logicians believe that the use of cardinals does presuppose the ordinals. They point out that the members of one and the same set can be ordered in all kinds of ways, but its cardinal number remains the same : cardinals therefore are order-indifferent. There is undeniably some appreciable difference in the relation between an object and the number correlated with it according as the number is being used to answer the question " how many ? " or the question " in what position ? ". In the latter case, even if the objects have no order until the numbers impose one upon them, once an ordinal has been assigned to an object that number and no other belongs to that object and no other. But in counting things to find out how many there are our indifference to the order is apparent throughout in that it never matters which object is counted next, and after a thing has been counted it no longer matters which particular number was assigned to it ; all that matters is that the object should not be counted again. This, however, only shows that to state the cardinal number of a set is not to say anything about the order of its members. The fact remains that to discover the cardinal number of a set we have to use the numbers to count its members in some order or other ; their use as ordinals seems to be part of the verification procedure. (A rough parallel : to describe someone's character is not to say precisely what he does, but the description can only be verified by observing his actual behaviour, the description of which is therefore logically prior to the description of his character.)

But is it necessary to well-order a set in order to count it? We have already mentioned that the size (in the relevant sense) of very small sets can be taken in at a glance. Suppose now, what is pretty certainly true, that anyone at all can recognise at a glance a triplet of objects or signs representing the objects, or at least can be trained to do so. Then theoretically the cardinal number of a given set can be determined without assigning a particular number to any particular member of it (except in some cases the last), for we can select an unordered triplet from it and correlate this with the first triplet of numbers, then correlate another unordered triplet with the next triplet of numbers, and so on, and finally correlate the remaining member or pair of members, if any, with the next number or pair of numbers. Thus it seems as though the objects do not have to be well-ordered, nor, even in passing as it were, does each have to receive an ordinal number.

The objection is really very similar to the previous one. We have already agreed that to assign the cardinal number n to a set is not to say that it *is* well-ordered by the numbers up to and including n, but only to say that it can be. If in practice there are ways of finding out what its cardinal number is without actually attaching a number to each of its members as we do in assigning ordinals, then naturally we shall use such methods so as to save time or for other non-logical reasons. But it is important to notice that the actual use of such and such a particular procedure is not what is logically essential. What *is* logically necessary is that we ascertain by whatever means are practical that the objects could be well-ordered by the numbers up to n. This is shown by the following facts: that even in the time-saving procedure the triplets of numbers themselves must be selected from a well-ordered series (they are uttered or written down in strict sequence); that the unordered triplets of objects have themselves to be ordered in some way, such as putting those that have been counted away in a separate pile; and that in practice whenever any doubt or difficulty arises we at once revert to the normal procedure of assigning the numbers to the things one by one. Added to which, it is doubtful whether anyone could ever learn to count in triplets if he hadn't first learnt to count one at a time. There is an analogous difference in methods of adding. A clerk runs a pencil down a column of figures and writes the correct sum at the bottom with a speed which surprises the mere mathematician, but we don't ask him to teach his methods to a student of elementary arithmetic until he has finished acquiring slower but more fundamental techniques, nor do we reject the recursive definition of the additive function for whole numbers on the ground that the clerk has shown it can be dispensed with. In both cases the specific step by step procedure is both logically and psychologically prior to the more sophisticated method.

According to Russell a number is a class of similar classes, two classes being similar when they are (or let us say can be) correlated one to one. Cardinals so defined can be shown to possess an order, but they do not in any sense presuppose the ordinals. To say I have five fingers on my left hand is simply to say that this class of fingers is a member of the second-

order class '5'. Suppose that from this definition the whole of arithmetic in the formal sense can be derived without any kind of difficulty; the question still remains, how can we verify that a given class, say of peas in a pod, has five members? Or how do we set about discovering what its cardinal number is? According to the logistic school, to count them is simply to establish a one to one correlation between the class of peas and the numbers "1, 2, 3, 4, 5", that is, to show the two classes are similar and therefore have the same cardinal number. But surely the two classes are not logically on a par during the operation; I use the numbers to count the peas and don't use the peas to count the numbers; nor do I know before the process of counting is finished precisely which set of numbers will turn out to be similar to the class of peas; nor choose the numbers at random. In other words, the counting process seems to be logically more complicated than Russell's theory recognises. I apply the series of numbers, starting with 1 and taking them in a strict order, as the conventional measure of the size of sets such as the peas, in much the same way as one applies a ruler to a straight line or a protractor to an angle. One is a standard, the other an object of investigation by reference to the standard. That the numbers, taken in their conventional order, occupy a special position over against all similar sets and that their function cannot be taken over by any other set which does not possess the same kind of order, may be seen by trying to do without them. Suppose the Stationery Office published standard sheets with different numbers of black dots on them, and these were our only cardinal numbers; then in order to lay down an effective finding procedure such as we in fact have for discovering (say) the population of a town, the sheets would have to be ordered according to their size or upon some closely related principle. Given such an order we could, by correlating the names of the inhabitants with the marks, find one sheet which is too small, and another which is too large, and thus determine a finite set of sheets within which the right one could be found by an obvious process of narrowing down. But without a well-ordering of the sheets no effective finding procedure could be laid down. The point here is not that it would be troublesome in practice to use some set of objects other than the traditional numerals as numbers: the important thing is that before any such alternative sign or physical object could take over the logical functions of a cardinal number it would first have to be given the properties of the corresponding ordinal.

Are the smallest cardinals presupposed by the ordinals? Then, to consider 1 first, in the same sense as some concept of uniqueness seems necessary in order to assign ordinals to the members of a progression, so it seems to be presupposed in the process of counting in so far as this involves assigning single numbers to single objects. (It is easy to understand why some philosophers should have thought of a cardinal number as a sum of "ones", for whatever method of counting is used we have constantly to make sure that what is taken for an object isn't in fact two objects stuck together; and with some kinds of "object" there can be a genuine uncertainty in

some cases whether we are dealing with a single instance or more than one —for example, in enumerating the principal character traits of a person who is both generous and fond of praise.) Now if this means that the cardinal number 1 is presupposed in counting then it must be very different from all other cardinals except 2, because instead of occurring only once in an act of counting it will crop up all through. On grounds of simplicity, therefore, one would prefer to suppose that intuitively recognised oneness is not the cardinal number 1, and what seems to clinch the matter is that this sort of uniqueness has to be recognised in an object before it is labelled with the number ' 1 ' used as a cardinal. Whatever this fundamental kind of uniqueness may be precisely, it seems to be implied by the indefinite article attached to the predicate by which the class of things to be counted is generally defined. In many languages which possess an indefinite article it is grammatically the same word as " one ". In English " he gave me a pound " counts as a lie if in fact he gave me more than one pound, and in some uses " one " actually takes over the role of the indefinite article ; we say more or less indifferently " a man I met said—" or " one man I met said—". It seems then that this sort of uniqueness is more primitive than the cardinal number 1 and goes logically with the concept. Perhaps we ought to say that to possess a concept or understand a predicate is being able to recognise, not simply that the predicate applies in such and such a case, but that it applies *uniquely*. In the case of 2 also it seems reasonable to maintain that to recognise the difference between one object and another is not the same as recognising them as a set of two, for the cardinal number 2 is sometimes assigned to a set only after counting, and this presupposes the distinction of objects.

Does the series of cardinals begin with 0 or 1 ? The formal logician who constructs the numbers out of classes beginning with the null class naturally starts with 0, and there are circumstances in which ordinary usage supports him, for example the conventional method of scoring in cricket. This, however, seems to be exceptional : generally speaking language doesn't recognise 0 as a cardinal (as distinct from a whole number). In appropriate circumstances the natural answer to the question " how many ? " is not " zero " or " nought ", but some locution such as " there aren't any more ", " there are none left ", " there's nothing in here ". All these phrases are purely negative ; they don't profess to assign a number to the class or predicate ; they simply reject the notion that there are any members or instances of it to be counted. The account that we have given of the cardinals suggests a similar conclusion, for it appeared that to assign a cardinal to a class is to say that its members could be correlated one to one with the initial segment of numbers ending with that number, and obviously this will only work if the series begins with 1. It therefore seems preferable not to introduce 0 until it is required for the arithmetic of positive and negative whole numbers.

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PROFESSOR MALCOLM ON DREAMING AND SCEPTICISM—II

Part II : Sleeping and Dreaming

Malcolm seems to think that having dreamed entails having been sound asleep, for he seems to claim that the dreams we allegedly have while only half asleep (half awake) are really hallucinations (35). I think that these views misrepresent a good deal of the ordinary usage of ' dream ' and ' sleep '. It is useful, of course, to distinguish between being half asleep and being fully asleep. A person who is half asleep is only drowsy ; he can open his eyes, or by means of hearing and touch he can identify some of the things going on around him. But a person who is fully asleep may be either in a deep sleep, from which it is difficult to awaken him, or in a light sleep, from which it is easy to awaken him. In neither kind of sleep can he open his eyes or—except very rarely—correctly identify things going on around him. But there is a common kind of dream which occurs in light sleep and is, so to speak, ' built around ' a misperception of some nearby gross event, either inside or outside the dreamer's body. The feeling of the hot water-bottle is ' surrounded ' by a visual dream of trudging through the molten lava of Mount Etna.[11] The hearing of a dog's bark is ' surrounded ' by a visual dream of a shouting mob.[12] And so on and so forth. Such dreams are really dreams, even though the person who has them is in some sense aware of, but unable correctly to identify, a nearby gross event inside or outside his body.[13]

Not all writers have reacted in the same way to the fact that there are such dreams. A great many of them, with the laudable motive of avoiding phantasms, have thought that *all* dreams are of this kind. One of the earliest careful expositions of this view may be found in Aristotle's *On Divination*, but it has been adopted by innumerable later writers. And it has been presupposed by most experimental work on dreams since Maury's.[14] When there has not seemed to be any gross internal or external event that the dreamer was misperceiving, many writers have postulated that the dreamer was misperceiving very minute recondite entities such as corpuscles in

[11] J. Abercrombie, *Inquiries Concerning the Intellectual Powers and the Investigation of Truth*, American ed., Boston, 1841, 199-200.

[12] H. Bergson, *Mind-Energy, Lectures & Essays*, trans. H. W. Carr, London, 1921 100-101.

[13] I know of one extraordinary case in which the gross nearby object was *seen* by the dreamer and the 'surrounding' or accompanying dream material was auditory and visual. Apparently, such dreams were made possible by the dreamer's life-long habit of sleeping with her eyes half open. See Eleanor H. Rowland, " A case of visual sensations during sleep ", *The Journal of Philosophy*, 6, 1909, 353-357.

[14] L. F. A. Maury, *Le Sommeil et les Rêves*, 3d ed., Paris, 1865.

retinal arteries, entoptic particles, and so on.[15] Malcolm, on the other hand, seems to have reacted differently, suggesting that such dreams are not really dreams at all but perhaps hallucinations, and that a person can really dream only when he is in a deep sleep.

> I must mention here a complicating subtlety. Suppose . . . I *dreamt* that I heard a roaring and clanking (like that of a nearby tractor) and dreamt that this noise was made by a dinosaur. I believe we should be inclined to say that I *heard* the tractor *in my sleep*, although I had no suspicion, upon awakening, that there had been such goings-on, until I was told. I think we should also be inclined to say that my sleep was not completely sound, that I was not utterly " dead to the world " (22, Footnote 9).[16]

It seems to me as plain as anything in a language-game ever does that this suggestion is flatly opposed to one of the commonest usages of the word ' dream '. Moreover, it may turn out that Malcolm has committed himself to the view that in point of fact there are no dreams at all, for it has turned out that persons who are suddenly awakened from deep sleeps hardly ever recall having dreamed.[17] This kind of mistake resembles other mistakes that have been made regarding dreams. For example, while examining the famous *Report on the Census of Hallucinations* in 1894, Edmund Parish, in compliance with a favoured doctrine, boldly replaced ' hallucination ' with ' dream ' wherever he could.[18] Again, in compliance with another favoured doctrine, Bergson denied Robert Louis Stevenson's claim that many of his stories were taken from dreams, and boldly asserted that Stevenson must have invented his stories at night and then later on misrecollected his inventions as dreams.[19]

For reasons mentioned in Part I, I think that being in a sound sleep, whether deep or light, is not incompatible with being conscious. I should also say that being sound asleep is not incompatible with being conscious and dreaming. And I should even say that it is logically possible for a person to be dreaming in a sound but light sleep and at the same time to be conscious of some nearby event though unable to identify it correctly. These general remarks do not by any means constitute an adequate logic of the word ' dream ', for there are many kinds of more or less familiar

[15] A great many lists of the kinds of recondite entities we allegedly misperceive in dreams have been drawn up and published. One of the most detailed and colourful was that of F. E. Cane in his article " The Physiology of Dreams ", *Lancet*, December 28, 1889, 1330-1331.

[16] See also Section X, pp. 33-35.

[17] Towards the end of the last century this opinion was supported by several writers. See, e.g., August Forel, *Hypnotism*, trans. H. W. Armit, 5th ed., 1907, reprinted in New York, 1949, 73-74. Recently it has been asserted much more solidly by brain physiologists such as H. Blake, R. W. Gerard, and N. Kleitman, in their " Factors Influencing Brain Potentials during Sleep ", *Journal of Neurophysiology*, 2, 1939, 52, 58, 59.

[18] *Hallucinations and Illusions*, English edition, London and New York, 1897, 93-107.

[19] H. Bergson, *op. cit.*, 92. It is interesting to note that complaints have been registered against such procedures as Parish's and Bergson's. See, for example, Mary Arnold-Forster, *Studies in Dreams*, London, 1921, 110-111.

occurrences in which they would fail to settle urgent questions about the application of the word ' dream '. But they are right in the main, whereas Malcolm's are not.

In the remainder of Part II, I shall consider at some length two subjects : first, the sense in which dreaming is an occurrence, and secondly, the grounds for saying that the content of a dream experience is similar to the content of a waking experience.

Broadly speaking, Malcolm thinks that dreams are not occurrences in the same sense as robberies and accidents because " we have no way of determining *when* a dream occurred or *how long* it lasted " (28) and because although a person's report of yesterday's robbery might be verified and checked it would be " senseless to suppose that his dream differed from his report of it unless this means that he might change, add to, or contradict his report " (30).

The problem of dating dreams is admittedly a formidable one. But it is no more formidable, and in some respects less so, than the problem of dating many other kinds of occurrence that most of us would unhesitatingly call ' real '. A pang of terror under curare or in cataplexy is datable in the sense that a person recovering from these conditions could recall synchronizing the pang with the chime of a public clock. Whereas, when a dreamer awakes he cannot recall hearing and identifying the chime of a public clock. But he may have been conscious of it during his dream ; only it may then have appeared as the sound of a village smithy's hammer striking the anvil. For millennia people have supposed that they often had good grounds for saying that certain identifiable real events were fantastically misperceived by dreamers. To the extent that this is so, dream events can be synchronized with waking events. But although in this respect a dreamer is at a disadvantage as compared with a person under curare, in another respect he has an advantage over him. For whereas a dreamer can be suddenly awakened at any moment and his memory-report of the immediate past recorded, a person under a massive dose of curare cannot be roused at all. Most experimental investigators of dreams have taken advantage of the dreamer's capacity for being suddenly awakened. In this respect dreams are like subtle serial aesthetic experiences. For an investigator of such experiences must rely entirely on the aesthete's recollection, and once an aesthete is interrupted with questions, he usually cannot resume the series. At any rate, to say that at a certain time a person is dreaming of, e.g., a dragon, is to say that if he were suddenly awakened at that time, he would recall having just previously dreamed of a dragon.

There is at least one curious difficulty in the position just outlined ; Malcolm expresses it as follows :

> Some psychologists have conjectured that dreams occur, not during sleep, but during the period of *awaking* from sleep. Our feeling that it is impossible to decide whether this is so or not shows that we have no *criterion* for deciding it (28-29).

I do not have any answer to this objection that entirely satisfies me. But something may nevertheless be said in reply. For one thing, the usual grounds for conjecturing that dreams may occur during the few seconds of waking up presuppose that dreams can be quite accurately dated. These grounds usually consist of cases in which a person goes through something like the following sequence of events : he hears the first stroke of ten by the village clock and immediately dozes off ; he awakes hearing the last stroke of ten ; he then recalls having heard the first stroke of ten and having afterwards dreamed a long, complicated dream. The hypothesis that dreams really take place within a few seconds, however long they may seem to a dreamer in retrospect, has sometimes been used to help explain Maury's guillotine dream and others like it. Once while his mother was reading to him, Maury dozed off and had a complicated, connected dream about the Reign of Terror, which culminated in his being guillotined ; as the blade struck his neck, he awoke suddenly to discover that a second earlier an ornament on the bedpost had fallen and hit him on the neck.[20] One such explanation is that the ornament struck first, then the dream occurred, enduring through the few moments of waking, and then Maury, fully awake, misrecalled the temporal sequence of these events.

Apart from these details, there is a more general reply to the objection, namely, that an analogous objection might be made against claims for waking experiences. If, during a short interval, a person notices a bright moon-shaped surface whenever he adjusts himself in a certain way, one would naturally tend to explain this fact by saying that the moon-shaped surface existed throughout the interval, to be noticed or not according to the observer's adjustments. But according to one version of Berkeley's philosophy, the correct explanation is that whenever the observer's condition is adjusted in a certain way a moon-shaped surface begins to exist, whereas at other times no moon-shaped surface exists at all. This pair of opposed explanations is analogous to a pair of opposed explanations of dreamers' reports. Most people report having just dreamed if they are awakened during certain periods of the night. Some writers explain this fact by saying that the dreams occur only during the moments of waking but are misrecalled as long-lived and extending backward into the period of sleep. Other writers explain it by saying that we dream continually while we are sleeping.[21] As regards each pair of opposed explanations, many recent writers would probably say that the opposition is illusory because there is no possible way of deciding between the two explanations. At any rate, if there is no criterion for determining the times when dreaming was going on, is there any better criterion for determining the times at which there existed a moon-shaped surface ? Will it be said in reply that a criterion for there being a moon-shaped surface during a period of time is our being able, by adjusting ourselves in an appropriate way, to notice a moon-shaped

[20] Maury, *op. cit.*, 138-140.

[21] Forel, *op. cit.*, 74, 149.

surface at any moment during that period? But then why should it not be a criterion for our having dreamed throughout a certain period that we recall having just dreamed whenever we are awakened during that period? I do not say that the two cases are exactly analogous, but I suggest that much of the weight of objections against the claims for dreams would also attach to similar objections against the claims for waking experiences.

Just as there are respects in which dreams are as datable as many "real" experiences, so there are respects in which dreams are as checkable as many "real" experiences. Many investigators of dreams presupposed that there might be just as good generalizations about the production of dreams as there are about the production of after-images and subtle serial emotions. For example, many investigators have tested hypotheses about the way in which the application of various kinds of stimuli might produce dreams in a sleeper. It so happens that none of these hypotheses has been very successful, although suffocation has been alleged to produce the classical nightmare.[22] But they were certainly regarded as significant. And if they had been as successful as hypotheses about after-images, a person's report of a dream might often be successfully challenged. For some hypotheses about the production of after-images have been regarded as so sound that they may be used to test the reports of participants in experiments on hypnosis.[23] Probably the most important ground for the checkability of dreams is the extraordinarily widespread belief that in one way or another dreams are correlated with the future of the dreamer. In the classical works of Tylor and Levy-Bruhl we learn that in a large percentage of primitive societies a person's future prosperity is believed to be strongly dependent on his being able to recall his dreams correctly. Many of the old so-called rational writers, while trying to explain prophetic dreams, hit upon the hypothesis that although the earliest internal stages of a disease are too faint to be detected when we are awake, and distracted by powerful experiences, they can be detected when we are asleep. When a sleeper does detect them, he usually misperceives them in some odd way; that is to say, he has a dream which is a misperception of an incipient morbid condition. These writers then conjectured that there are discoverable correlations between species of dream and species of disease, and recommended that physicians try to discover them in order to make earlier diagnoses.[24] In more advanced societies it is widely believed that the prospects of a person's mental health are more favourable if he can recall dreams correctly and report them to a psychoanalyst. Whether or not any of these beliefs is true, they could hardly be regarded as senseless, as violating the ordinary usage of the word 'dream'. And if they are significant, then the correctness of a dream-report might be tested later on by observing its alleged consequences. For example,

[22] For an early allegation of this kind, see Macnish, *op. cit.*, 122-141.

[23] See, for example, R. M. Dorcus, "Modification by Suggestion of some Vestibular and Visual Responses", *American Journal of Psychology*, 49, 1937, 82-87.

[24] As examples: Aristotle, *On Divination*; and Aquinas, *Summa Theologica*, Sec. Sec. Quaest. xcv, Art. 1.

in explanation of someone's unfortunate life, the Iroquois might say that he had placed himself under the wrong tutelary genius through having misrecalled the dream of muskrat as a dream of a skunk. I might add that if the Iroquois also believed, as many do now, that a hypnotized person can recall things that he was aware of but did not notice, many of them would doubtless have themselves hypnotized in order to diminish the chances of misrecollecting their dreams. At all events, most primitive peoples, believers in psychoanalysis, and so on, would all reject Malcolm's statement to the effect that having really had a dream is the same thing as merely being under the impression of having had one (32). And I suspect that it could appear surprising to only Malcolm " that we should speak of ' remembering ' a dream " (32).

Malcolm suggests that to say that a person dreamed is the same as saying that after waking up he " relates that he thought and did and experienced such-and-such (all of this being false), and that in relating this " he is not lying, pretending, or inventing " (31-32). But when a dreamer awakes he often behaves as he would have behaved if he had just had a waking experience reportable in the same terms—except for the prefix ' I dreamed ' —as his dream report. If someone has a rapt expression and reports, " I just had a delightful experience ", we should almost certainly explain this fact by saying that he has just had a delightful experience and recalls it vividly. But on Malcolm's view the utterance of his report would be utterly inexplicable without the help of recondite scientific theories. For according to him a dream experience is not an experience in any sense that would allow it to explain the behaviour of a person who had just awakened from a dream. Why should a person sometimes make such odd utterances when he wakes up? Why does he not always content himself with yawning, groaning, coughing, humming, etc.?

In reply it might be suggested that the part of the utterance following the prefix ' I dreamed ' is often like a connected narrative and is sometimes like the formulated solution of some problem ; and that people quite often would rather tell stories and express solutions to problems than yawn, groan, etc. And this is doubtless true. But when a person relates a dream, he does not merely tell a story—he does not, for example, start off by saying ' Once upon a time '—or blurt out the solution of a problem.[25] He claims to be reporting experiences that he had while sleeping. According to Malcolm, he cannot do this without contradicting himself. Although nobody would want to report having undergone something ' contradictory ', still it is conceivable that due to the complexity of the concepts involved people have been confusedly claiming for millennia that they have undergone ' contradictory ' experiences ; just as for many centuries people sought a means of squaring the circle. After discovering that squaring the circle is a ' contradictory ' feat, people stopped talking about trying to do it. But

[25]Such conduct would deserve Professor Price's term " compulsive story-telling ". See *Proceedings of the Aristotelian Society*, Supplementary Volume 26, 1952, " Symposium : Seeming ", 224.

what is a person to do who, after he discovers that having experiences wh le sleeping is ' contradictory ', yet nevertheless continues to dream ? Will he begin relating his dreams by saying " Once upon a time . . ." or by saying " It suddenly occurred to me just now that the solution to the problem is . . ." ? This would make his sudden outburst explicable only by recondite scientific theories.

For if he seeks a plausible, familiar, everyday explanation, he would have to say that he made the outburst because he recalled, or seemed to recall, having undergone certain experiences while asleep ; but for such a person this explanation would be tantamount to saying that he recalled, or seemed to recall, having done something ' contradictory '. Malcolm thinks that on his view it is easy to explain the performance of unusual intellectual feats in dreams. He says : " Famous men testify to having solved difficult problems in their sleep. This can seem a paradox until we understand what it means : Namely, that they went to sleep without a solution and woke up with one " (27-28). But really, the explanation of such things is unusually difficult on his view. For famous men differentiate sharply between merely having a solution pop into their heads[26] and having had a dream in which the solution appeared to them, often in some fantastic form. Why did not Tartini simply finish his famous sonata and let it go at that, instead of relating a fantastic Faustian dream in which the Devil appeared to him and showed him how to finish it ?[27] And why did not Hilprecht simply state his brilliant hypothesis about the fragments of ancient votive cylinders instead of relating a fantastic dream in which an ancient Assyrian priest informed him of the real origin of the puzzling fragments ?[28]

Many non-verbal reactions and attitudes to dreams would also be inexplicable in any ordinary way if dreams were not experiences in roughly the same sense as waking experiences. For if they were not, how would one account for the attitude toward dreams that is expressed in the following statement by Miss Helen Keller ?

> Blot out dreams, and the blind lose one of their chief comforts ; for in the visions of sleep they behold their belief in the seeing mind and their expectation of light beyond the blank, narrow night justified. Nay, our conception of immortality is shaken. Faith, the motive-power of human life, flickers out. Before such vacancy and bareness the shock of wrecked worlds were indeed welcome.[29]

And how would one account for the fact that many writers, steeped in the nuances of ordinary English, have long and seriously pondered the question whether a person can commit sins in dreams ? Examples of such ponderings may be found in Daniel Defoe's *The History and Reality of Apparitions* and

[26] See, for example, H. Poincaré, *Science and Method*, trans. F. Maitland, London and New York, 1914, Chapter III.

[27] Reported in A. Briere de Boismont, *Hallucinations*, 1st American ed., taken from the 2nd Paris ed., Philadelphia, 1853, 202-203.

[28] See W. R. Newbold, " Sub-conscious Reasoning ", *Proceedings of the Society for Psychical Research*, 12, 1896-1897.

[29] " My Dreams ", *The Century Magazine*, 77, November, 1908, 73.

in Thomas Browne's essay "On Dreams". This attitude towards dream experiences is not peculiarly English. It is widespread among primitive peoples. In this connection, it is interesting to learn that according to the old customs of the Ashanti, if a tribesman utters a dream-report in which he relates having slept with another tribesman's wife, he may be fined not for slander or defamation of character or malicious rumour, but for adultery.[30] I venture to say that this custom could have been readily codified without violating ordinary Ashanti, without raising a titter among the Ashanti.

All these things being considered, Malcolm's belief that the logic of 'dream' makes it impossible for dreaming to be a 'real', conscious experience labours under burdens that are too heavy for it. I shall suppose that a dream is an experience, in the most important sense of that word, and I shall now try to show that it is very similar to waking experiences.

If a dream experience were radically different from any waking experience, one would expect it to be as difficult for dreamers to describe dreams as it is for religious enthusiasts to describe the visions they have during ecstatic trances. Such visionaries generally agree that it is impossible to describe their visions in terms of the language of waking experiences, except by using it in wildly metaphorical ways. Some of them simply say that the visions are ineffable. But most dreamers would say that seeing, for example, in a dream is extremely similar to seeing, or seeming to see, in waking life; and in relating dreams they unhesitatingly use words like 'see' with no warnings or qualifications other than a preliminary statement that the seeing, or seeming to see, took place while they were asleep. Nor is this practice an idiosyncratic folkway of the English-speaking people, which English-speaking children learn at their mothers' knees but would otherwise not think of doing. The practice is as widespread as societies with developed languages. This elaborate fact would be inexplicable by ordinary means if dream experiences were radically dissimilar to waking experiences.

If dream experiences were radically different from waking experiences many well-established beliefs about dreams would be false, or else certain ancient usages of the word 'dream' would have to be forbidden. For real things are sometimes perceived in dreams. The dreamer hears the barking of a real dog as the shouting of a mob. The noise heard by a waking person who listened to the dog would be very similar to the noise heard by the dreamer. And when the dreamer hears the barking of the dog, he seems to see a restive mob; whereas when the waking person hears the barking, he seems to see, and does see, a dog. Not only do perceptions, or misperceptions, of real things invade dreams; fragments of dreams also invade waking experiences by persisting after the dreamer has awakened. And this is true not only of visceral experiences but also, though more rarely, of visual and even auditory experiences. In such cases the dreamer awakes, remembers dreaming of, say, a baboon, gets to his feet, and then for half a minute continues to see, or seem to see, the baboon, except that now the baboon

[30] See R. S. Rattray, *Religion and Art in the Ashanti*, Oxford, 1927, 93.

seems to have taken a position alongside the real furniture at the far side of the room and to have screened the real objects behind it. So far as his vivid memory of the recent past goes, his seeming to see the baboon went on while he was seeming to see various things in a dream and then persisted while he was seeing real objects.[31] Similar cases have been reported by persons of unquestioned intelligence, education, and imperturbability, such as Spinoza.[32] Dream-objects that have persisted into waking life have even been given a class-name, 'hypnopompic hallucinations'.[33] I think that in such cases one either has to admit that dream experiences are very similar to waking experiences, or else lavishly adopt *ad hoc* assumptions that the person making the report was not really dreaming, or that he misrecalled his dream, or that after waking he did not really seem to see a baboon but was confused and mixed up.

And if dream experiences were radically different from waking experiences, it would be very difficult to find a familiar, everyday explanation of the fairly frequent occasions on which people have seriously mistaken memories of dream experiences for memories of waking experiences. In many of these cases the persons involved were of unquestioned good sense, and some of them had good backgrounds in the relevant sciences. For example, the early French psychiatrist Baillarger once spent most of the day 'remembering' that a certain person had been appointed editor of a newspaper and mentioning this alleged fact to several people; it was not until three o'clock in the afternoon that he suddenly realized that he had only dreamed of the appointment.[34] Some people have had to carry out extended investigations to disentangle memories of dreams from memories of waking life.[35] An interesting case of a similar kind is that of Miss Helen Keller. In her early years she was especially liable to mistake memories of dreams for memories of waking experiences, because, being deaf and blind, her waking life did not have the elaborately detailed orderliness that helps people who can see and hear to distinguish these two kinds of memories.[36] On the other hand, I am sure that people fairly commonly mistake memories of waking experiences for memories of dreams. In fact, the first three persons to whom I directed inquiries concerning this point all claimed to have done so at least once. In each case the person awoke in the morning and seemed to recall having dreamed of re-arranging things in a certain way; but when he subsequently arose he discovered that the things really had been re-arranged in that way, and he concluded that he had awakened during

[31] Abercrombie, *op. cit.*, 257.

[32] Letter to Peter Balling, Epistle 30, translated by F. Pollock in *Spinoza : his Life and Philosophy*, London, 1880, 56.

[33] See, for example, F. E. Leaning, "An Introductory Study of Hypnagogic Phenomena", *Proceedings of the Society for Psychical Research*, 35, 1925, 353-355.

[34] Reported by H. Taine in *On Intelligence*, revised ed., trans. T. D. Haye, New York, 1889, Volume I, 65.

[35] See, for example, H. B. Alexander, "The Subconscious in the Light of Dream Imagery", *Proceedings of the American Society for Psychical Research*, 3, 1909, 640.

[36] See Helen Keller, "My Dreams", *The Century Magazine*, 77, November, 1908, 73-74.

the night, re-arranged them, and gone back to sleep. Unfortunately, carefully reported cases of this kind are hardly ever published. The best example I know of is an incident in the life of a distinguished Scotch lawyer, which Abercrombie described as follows :

> This eminent person had been consulted respecting a case of great importance and much difficulty ; and he had been studying it with intense anxiety and attention. After several days had been occupied in this manner, he was observed by his wife to rise from his bed in the night and go to a writing-desk which stood in the bedroom. He then sat down and wrote a long paper, which he carefully put by in the desk, and returned to bed. The following morning he told his wife that he had a most interesting dream—that he had dreamed of delivering a clear and luminous opinion respecting a case which had exceedingly perplexed him ; and that he would give anything to recover the train of thought which had passed before him in his dream. She then directed him to the writing desk, where he found the opinion clearly and fully written out, and which was afterwards found to be perfectly correct.[37]

There are, however, many examples of persons who arise from their beds at night, pursue some absurd purpose with great ingenuity and at great length, return to bed, and wake up in the morning seeming to recall having dreamed it all.[38] In the light of all these various kinds of facts, it seems quite plain that the reason why clear-headed people sometimes confuse memories of dream experiences with memories of waking experiences is that they are so similar.

Now one of the most interesting conclusions that Malcolm draws from his primary claims about the logic of ' dream ' is the following :

> Not only is there a kind of self-contradiction in claiming or affirming that one is sound asleep ; there is the same kind of self-contradiction in wondering or conjecturing whether one is sound asleep, or in being in doubt about it. . . . And if you should be under the *impression* that you are sound asleep it would be a self-contradictory impression : for the proposition " He is under the impression (it seems to him) that he is sound asleep " entails the proposition " He is not sound asleep " (19-20). . . . Whether or not a particular person would see this point of logic, in any case no general ground for skepticism is provided (26).

If Malcolm were right in this, no waking rational person would admit wondering whether he was asleep, unless, due to the complexity of the ideas involved, he had failed to realize that he could not profess his wonderment without contradicting himself. For no rational person would knowingly commit himself to contradiction. Yet I believe that there are some uncommon, but by no means unexampled, situations in which almost any waking rational

[37] Abercrombie, *op. cit.*, 215-216.

[38] For some examples, see Abercrombie, *op. cit.*, 218, and Macnish, *op. cit.*, 154-155.

person would admit wondering whether he was asleep, even if he had mastered Malcolm's article. A person would be in such a situation if he had just awakened from a certain kind of elaborate false-awakening dream. In a moment I shall invent a realistic example of this kind, but before doing so I shall make a few general remarks about false-awakening dreams.

In a false-awakening dream, a person dreams that he awakes and then, often, dreams again that he awakes and, finally, really awakes. The false awakenings frequently take place in the dreamer's own room. While a person is in a false-awakening dream, he commonly does the following things at various stages : comes to believe or suspect that he is dreaming, makes tests to confirm or disconfirm such suspicions, and tries to awaken himself by an effort of will.[39] If a dreamer suspects that he is dreaming, he usually tests for dream-gravity ; that is, in his dream he flaps his arms, or jumps, and then notices whether the results agree with the laws of real gravity. But many other kinds of test have been reported. Mach, for example, once dreamed that he proved he was dreaming by noticing that the visual perspectives of things were wrong. Self-awakening dreams are familiar to most people. Many dreamers report an ability to escape from nightmares by willing to wake up, and some report an ability to prolong pleasant dreams by willing to do so.

Let us now suppose that Malcolm himself has just awakened from an elaborate false-awakening dream. Let us further suppose that he is lying in bed in his own room, and that it seems to him that he is vividly recalling a dream whose details are hereupon set forth.

> He was walking along a bridge when he suddenly suspected that he was dreaming. As a test he jumped off the bridge. Instead of falling, he floated off into the air. Having thus satisfied himself that he was dreaming, he made an effort to wake up. Abruptly, the scenery of the bridge disappeared, and it seemed to him that he was lying on his back in bed and looking around at the familiar things of his own room. It also seemed to him that he was vividly recalling his dream of the bridge. He thought to himself that now he was awake, it would be dangerous to make tests by jumping off bridges. But after a short while he noticed that every few seconds a giraffe put its head through the window and announced the exact time. He then wondered if he was still dreaming ; and to resolve his doubts he executed a flap test, by flapping his arms like wings. He rose into the air. Still dreaming, evidently. But he had become tired of dreaming and wanted to wake up. How to do this ? Should he again simply will to wake up ? But he seemed to recall that when he had done

[39] So far as I know, the main article on false-awakening dreams is " Dreams in which the Dreamer Knows he is Asleep ", by A. E. Brown, *Journal of Abnormal and Social Psychology*, 31, 1936-1937. Other references are : F. van Eden, " A Study of Dreams ", *Proceedings of the Society for Psychical Research*, 26, 1913, 446-448 ; E. Mach, *Contributions to the Analysis of Sensations*, trans. C. M. Williams, Chicago, 1897, 87 footnote 1, 114 footnote 1 ; H. A. Carr, " Some Novel Experiences ", *The Psychological Review*, 19, 1912, 62-63 ; Helen Keller, " My Dreams ", *The Century Magazine*, 77, November 1908, 70-71.

that a few moments ago, he had not really awakened. Still, there seemed to be no other way, and so he willed to wake up. [End of dream.]

Malcolm really awakes. He is really lying in bed on his back and is really looking around at the familiar things in his own room ; and it seems to him that he is doing so. It also seems to him that he recalls having just awakened and having just prior to that dreamed that he willed to awaken himself. Nay, more, he seems to recall having dreamed still earlier that he had then awakened under similar circumstances, namely, seeming to himself to be lying in bed and looking around at the familiar things of his room, seeming to recall having just awakened and having just prior to that dreamed that he willed to awaken himself, etc. But he now seems to recall that in the earlier parts of his dream the awakenings had turned out to be false, and that in his dream he had discovered one of them to be false by making a test. I feel fairly confident that at this point Malcolm would wonder whether he was still dreaming. And wondering if he were awake, he might very likely propose to himself to make a test. But what language would he use for formulating the proposal ? He cannot say to himself, " I shall forthwith execute a flap test to determine if I am asleep ". For according to him, this would commit him to saying, " In my present waking state I shall forthwith execute a flap test to determine if I am asleep ". And this would be contradictory in the sense he described. On the other hand, he cannot say, " In my present dream I shall execute a flap test to determine if I am asleep ". According to him, this statement would be absurd. For whereas one may significantly say, " In my dream I did so-and-so " or even " In my dream I shall do so-and-so ", one may not significantly say, " In my dream I am now doing so-and-so ". Besides, the preambles to these proposals make the tests unnecessary. But there does not appear to be any other language, dreaming or waking, in which Malcolm could propose to himself to make such a test. Nor would he want to say, " I'll just wait and see if a giraffe starts putting its head in the window and announcing the time ". For, according to him, the use of such a sentence for the purpose of asserting something entails that the user is awake ; and I am sure that Malcolm would avoid any action from which it would be inferred that he, knowing he was awake, nevertheless waited to see if a giraffe would put its head in the window and announce the time.

Perhaps Malcolm would remain adamant in such a trial. I do not doubt that in nearly all normal conditions an awaking person will very soon know that he is awake, if only in the sense of no longer wondering about it. But having just awakened from the kind of dream I have sketched, most rational people would, I think, if only for a short interval, feel flutters of wonderment, urges to propose tests to themselves, and so on. And whereas they would not hesitate, so it seems to me, to profess their wonderment during that interval,[40] Malcolm's hypothesis about the logic of ' dream '

[40]Although he would probably agree with Malcolm on most other points, even O. K. Bouwsma, in a characteristically ingenious article, allows that when one is first waking up it is sometimes permissible to wonder if one is awake or still dreaming. See his " Des Cartes' Skepticism of the Senses ", *Mind*, 54, 1945, 318-319.

would prohibit them from doing so, on pain of absurdity and contradiction. Perhaps Malcolm might want to allow them to utter certain strings of words containing 'wonder' and 'test' that look like expressions of wonderment but really do not express any propositions at all. Such utterances would be reactions or seizures that people occasionally undergo when they first wake up.[41] On such occasions they wake up, then their eyes glaze over while they senselessly gibber strings of words containing 'wonder' and 'test', and then, the seizure passed and their eyes unglazed, they arise and behave in the normal waking manner, which includes talking sense. I could not accept such an explanation. I should say that the correct explanation is what we have always thought it was, namely, that dream experiences are often very similar to waking experiences—or even that the content of dreams is often very similar to the content of waking experiences.[42]

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[41] This guess is based on the assumption, possibly groundless, that Malcolm would, like Wittgenstein, regard dream-reports as more like sensation-sentences than sentences about public objects. See his "Wittgenstein's *Philosophical Investigations*", *The Philosophical Review*, 63, 1954, 537-549.

[42] In concluding this essay, I herewith acknowledge that the task of assembling materials for its composition was made lighter for me by consulting the following two publications: Mr. Ralph L. Woods' large assemblage of fragments from the literature on dreams, *The World of Dreams*, Random House, New York, 1947; and Professor J. G. Miller's survey of the concepts of consciousness employed by journeymen scientists in their daily work, *Unconsciousness*, New York and London, 1942.

METAPHYSICS AND SCIENCE

The most conspicuous feature of the pre-war Logical Positivist movement was its attack on Metaphysics. Traditionally, 'metaphysics' had meant a set of general statements about the universe as a whole, or about very comprehensive classes of things or events, purporting to give a true account of the fundamental nature of the universe. The positivist line of attack was to inquire of each such statement, Is it empirically verifiable —i.e., does the acceptance of it modify our expectations as to what we shall or shall not observe, so that there are some observation-statements which are incompatible with it, and others which follow from it, given the rest of our beliefs about the world? If it is empirically verifiable, it is in character a scientific proposition, and belongs, if true, to the body of propositions making up one or other of the natural sciences. If it is not verifiable, it cannot be, as it claims, informative about the nature of things. It can have no factual meaning, and cannot be, properly speaking, either true or false; though it may have 'meaning' in some other way, for instance as an expression of sentiment, or as a proposal for a modification of terminology. The term 'metaphysical', used derogatively, was reserved for statements of this kind.

If one examines the content of writings on 'metaphysics', one finds plenty of assertions which are exposed to the logical positivist attack. Take "The world was created by God". What can be deduced from this statement as to the observable characteristics the world will and will not display if the statement is true? Apparently nothing. Anything that can happen is consistent with the assertion that the world was created by God, and equally consistent with its denial. Our statement can determine no expectations, and can be neither confirmed nor refuted by observation. It is not a genuine statement about the world.

Take "Time is not ultimately real". Since all our experience is admittedly temporal, it is impossible to observe anything inconsistent with the reality of time. No conceivable observation could serve as a test of this statement. It is not a genuine statement either.

Take "All process has the form of thesis, antithesis, synthesis". This looks more promising. But in fact the notions of thesis, antithesis and synthesis are so vague that *any* sequence of events can, with a little selection and distribution of emphasis, be made to fall into this pattern. The Hegelian philosopher is in the position of the astrologer who forecasts disturbances in the Middle East in March, secure in the confidence that, whatever happens in the Middle East in March, the concept 'disturbance' can be made to fit it. He says nothing definite enough to be confirmed or refuted, and so nothing that can be either true or false.

So with " The soul is the form of the body " and " Mind and body are aspects of a single substance " and many other attempts to deal with the " mind-body problem ". The conclusion is that statements of this kind form no part of either a true or a false theory about the nature of things ; and, in consequence, that anybody who concerns himself with them for any purpose except to expose their senselessness is wasting his time.

Nowadays, neither the verifiability-principle nor any alternative single criterion of factual meaningfulness is often advocated. But the kind of argument I have been illustrating is still in regular use for dismissing well-known philosophical doctrines from serious consideration. I think that in principle this line of argument is sound, and that the distinction between empirically testable statements, which can contribute to our knowledge of the world, and empirically untestable statements, which cannot, must be upheld. But this distinction is difficult to apply in many particular cases, some of them important cases. For there are indirect ways in which a statement may be connected with empirical facts, and may be rendered more or less plausible in their light, without it being possible to *deduce* any observation-statement from it. And this makes the attack on metaphysics much less destructive than it would otherwise appear. My point can be most clearly made by a few examples.

Take first what is admittedly a scientific theory, Darwin's theory of evolution by natural selection. Given this theory, and given whatever information we have of the structure and living-conditions of some particular species at some particular period, what can be deduced as to the structure of that species at a later period ? Clearly nothing ; any inferences a biologist may make on the basis of his knowledge can turn out wrong without imperilling the credit of Darwin's doctrine. The general theory, when added to the known detailed facts, does not imply any particular account of the evolution of, say, the horse, and is neither proved nor disproved by the proof or disproof of any such account. The connection between the general theory and the particular accounts is rather this, that what the theory says is that for each evolutionary change one can discover a causal explanation *of a specified type*. The general theory does not determine any special theory, but does determine the type of all special theories in a given field. What confirms it is the confirmation of more special hypotheses, which are not deducible from it, but are in conformity with it. What would, not exactly refute it, but bring about its abandonment, would be the failure to discover any well-evidenced explanations of the required type. Something has to be observable for Darwin to be right ; but what it is is only determined in a very general and indirect way.

Compare with this Marx's theory of economic determinism. A Marxist historian approaching an unfamiliar period of history cannot say what were the particular economic factors which brought about the rise and fall of peoples and classes in that period. What his theory does assure him is that an explanation of a certain type is discoverable. To establish the

truth of Marx's theory it is necessary to accumulate a whole set of such explanations, and to show that they cover the facts effectively, while explanations of other kinds do not. Marx's theory is inferior to Darwin's, in that the manner in which mutations advantageous to survival influence the characteristics of species is clear, whereas the manner in which changes in the mode of production determine political and ideological revolutions is obscure. But the logical relation between the general theory and particular applications of it is much the same.

Now take Behaviourism in psychology. Your Behaviourist postulates that human conduct is to be explained in terms of observable physical processes taking place in the organism concerned and in things in the environment affecting that organism, without reference to any processes unobservable to the psychologist taking place in the consciousness of the individual concerned. This does very little in the way of positive specification of the sort of hypotheses to be discovered ; but it does a lot negatively, in ruling out any hypothesis attributing an influence to feelings, ideas, intentions, or other factors of this kind—factors which play an important part in the explanations offered by other schools of psychology. The test of Behaviourism as a doctrine lies in whether workable theories of its specified type can be constructed and verified, and whether workable theories of other kinds can be.

Now take something more general still, the causal axiom or the principle of Uniformity of Nature. (I need not here choose between the various alternative ways of formulating such a principle.) From the assumption that every event, in every feature of it, is an instance of some universal law, nothing follows about any particular situation or class of situations. The character of the discoverable laws is completely undetermined. Attempts to make laws of nature *deducible* from the observed facts by means of a principle of uniformity are misguided. But the principle is by no means empty. It assures us that some law governing each type of phenomenon exists, and therefore there is some point in trying to find out what it is. Without this assurance, many branches of science would have never been started, or quickly abandoned.

In these instances I have started from what is generally regarded as a scientific theory, and have moved progressively nearer to the traditional field of metaphysics. But each of the doctrines considered bears the same logical relation to the observed facts : viz., they assert that some hypothesis of a specified kind applies to these facts. They are confirmed to the extent that particular hypotheses of the specified kinds are confirmed. Shall we call them scientific ? They are not established or demolished in the way in which particular hypotheses can be, by a direct confrontation with observation. Yet they clearly play an important part in the thinking of scientists. In discussing the last of my examples, the causal axiom, philosophers have dwelt on the fact that it cannot be refuted : if, after repeated attempts, you fail to discover the cause of a phenomenon, you can still say that there is

an undiscovered cause. This is likewise true of my other examples. Hence the inclination to say that, if they belong to science, they belong not to its theories but to its methodology. But this is misleading. To adopt a method in all seriousness is to assume that the nature of things is such that that method will work ; i.e., it is to make a factual assumption, which may be of enormous importance. To say that every event has a cause, or that evolution proceeds by the natural selection of biologically advantageous variations, is to say something about the world. It is, indeed, to say the sort of general thing about the world that metaphysical philosophers have been in the habit of saying. We can, if we please, refer to propositions of this sort as methodological assumptions. This draws attention to the difference between the way they are confirmed and the way more specific hypotheses are confirmed. But it obscures the fact that, if a method is to be fruitful, the nature of things must be of one kind rather than another. The nature of things does not, indeed, determine which methods of investigation we adopt. But it does determine which methods are successful, and are therefore persisted in.

Thus a general notion of the nature of things may affect our opinions, not by having any deducible consequences, but by prescribing the kind of explanation which is acceptable, and the kinds which are unacceptable. It may be confirmed or disconfirmed by experience in an indirect way, in that various hypotheses constructed in accordance with it may be verified or falsified. Now, many of the traditional metaphysical views castigated by the positivists have this sort of connection with empirical hypotheses. And because this is so, it is hard to draw any sharp line between the metaphysical and the scientific, and harder than one might suppose to rule out any particular metaphysical view as wholly lacking in empirical consequences, and therefore empty of scientific content. There are some clear cases : for instance, I do not think that what I have said will do much for Bradley. But many doctrines of the metaphysicians do have this kind of indirect relevance to empirical findings, provided that we consider, not single propositions taken by themselves, but metaphysical views taken as wholes.

For instance, if you take by itself Spinoza's dictum that there is but one substance in the universe, and mind and matter are separate attributes thereof, you can make nothing of it. But take it in the context of Spinoza's complete theory, and you can make a great deal of it : namely, that there is a set of laws statable in terms of physical concepts by which every physical event can be completely explained, and a set of laws statable in terms of mental concepts by which every mental event can be completely explained ; and that to each physical event and each physical law there is a corresponding mental event and mental law.

Or again, Plato's theory, that a horse is a horse by reason of the ingredience of a Form of Horseness which exists independently of all horses, looks a plain case of gratuitous word-play ; obviously, no observation that we can make will make more probable the existence of the Form of Horse-

ness, or decide between Platonists and people who say " There are no Forms, but only classes of individuals resembling one another in certain respects ". But if you take Platonism in its complete expression, you can draw from it a ruling about the correct method for the investigation of nature : namely, that since each thing is an imperfect example of some one type or pattern, one should classify things according to their types, and seek an understanding of the type, ignoring the incidental divergences and anomalies. Platonism is justified to the extent that this line of inquiry can be followed to give definite results.

As to theism, I suspect that the man who believes in God, but does not allow this belief to make the slightest difference to anything he expects to happen or any feature he expects to find in the world, is a purely fictitious character. The belief in God, in the contexts in which it is actually held, carries with it a presumption of the possibility of giving a certain kind of interpretation to the events of particular human lives and human societies. It is not capable of being refuted by any crucial experiment ; but it is capable of being made untenable by a persistent failure to make the world fit the kind of pattern that it requires. If this is not the case, it is not a genuine belief at all, but perhaps an agreeable topic of contemplation, like listening to music.

Here it is worth pointing out that certain commitments which may well be called metaphysical are involved in the attempt at any kind of scientific investigation. If scientific inquiry is, at the least, an attempt to discover laws of nature, the pursuit of science commits one to the assumption that there are natural laws to be discovered. This is not a necessary truth ; worlds are conceivable in which it would not be the case—either lawless worlds, or worlds in which the laws were exceedingly complicated. Further, in so far as scientists concentrate their search on the discovery of laws of a particular kind, they make some assumptions about the nature of things. Scientists have at least a predilection for explanations which are ' mechanical ' in that they explain the activities of wholes by analysing them into complexes of activities of parts of those wholes. They look for causal explanations in terms of what has gone before, and not for teleological explanations in terms of what is to come. In so far as these procedures represent assumptions as to what the world is like, one may speak of a " scientific " metaphysics or world-view. The idea of a presuppositionless scientific investigation, which proceeds simply by collecting, sifting and classifying the given facts, is mythical.

Our initial approach to a scientific problem is determined by our metaphysical preconceptions, that is, by our views as to the sort of explanation which is discoverable. If, for instance, we are invited to attribute some recoveries from disease to miraculous divine intervention ; if we are asked to take seriously the Freudian apparatus of Ego, Id, Superego and the rest of the cast ; if we are presented with explanations of queer coincidences involving disembodied spirits, or extra dimensions of time, or astral bodies,

or the present apprehension of future events, it is most unlikely that our judgements on such explanations will be based simply on their capacity to account for the phenomena with which they are concerned. We do not apply to these explanations just the same standards of plausibility which we apply to a theory of a conventional type in a well-worked field of science. They are explanations of the wrong sort. Since metaphysical beliefs determine the kind of hypotheses that scientists put forward, a lop-sided or blinkered or downright erroneous metaphysic can hamper scientific progress.

To sum up. It is characteristic of many beliefs classifiable as 'metaphysical' that they do not imply any specific observable facts, but they do more or less precisely specify the sorts of explanation which are admissible, the sorts of hypotheses which are to be framed, in some regions of fact. Thus they are of great importance in determining the bent of our thinking on specific problems. While they are never proved and never refuted, they can be strengthened by empirical evidence, and they can, if the evidence is sufficiently adverse, be rendered untenable by sensible men. Thus, whatever the line of argument by which a general metaphysical theory is defended, it seems to me that the right way to evaluate such a theory is to examine what sort of theories it requires to be true in specific fields, and then to see to what extent these requirements have been fulfilled, or stand a reasonable chance of being fulfilled in the future.

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RATIONALISM, EMPIRICISM AND THE *A PRIORI*

The issue between empiricism and rationalism is commonly supposed to have something to do with *a priori* propositions. Sometimes empiricism is defined as the view that *a priori* propositions tell us nothing about reality. Possibly *a priori* propositions are about ideas; possibly they are about language; possibly they are empty and not about anything; but they are surely not about matters of fact. Sometimes, on the contrary, empiricism is defined as the belief that an *a priori* proposition is analytic—in this sense, that it does not express a synthetic connection between two distinct things or notions but only an analysis into its components of the entity or notion expressed by its subject. *A priori* propositions give us no new knowledge; they merely explicate what we already know. Correspondingly, rationalism is often construed as the denial of one or both of these assertions.

Such formulations of the issues between rationalism and empiricism in terms of the structure and reference of *a priori* propositions are unfortunate, for two related reasons. First, they institute a dispute where none exists by first constructing a doctrine which it is at least doubtful that any of the great traditional philosophers ever held, calling this rationalism, and then proceeding to proclaim empiricism as an alternative to it. Secondly, the cloud of dust raised by the vigorous beating of this straw man about the back and buttocks obscures the genuine differences of opinion which exist. These differences have really nothing to do with the comparatively recent 'issue' of synthetic *a priori* truth, a matter which has been explicitly discussed only since the time of Kant, but with two other issues which have been with us since almost the beginning of philosophy. One of these is the issue which divides monists and pluralists. The other is the difference which separates realists and idealists. Over and above these two issues there is not some third point of dispute between 'rationalists' and 'empiricists'.

The former of the above definitions is concerned with what *a priori* propositions are about—with what I call the problem of *content*. The latter has to do with the structure of *a priori* propositions and/or (depending upon the answer given to the problem of content) of the structures which such propositions are about—with what I call the problem of *analyticity*. Why these definitions? And why, since they are not equivalent, do so many empiricists seem to believe that they come to the same thing?

Hume held that whatever is different is separable: there are no necessary connections of different events.[1] This is Hume's *atomism*. Kant shared

[1] "Whatever is clearly conceiv'd may exist; and whatever is clearly conceiv'd, after any manner, may exist after the same manner. This is one principle, which has been already acknowledg'd. Again, every thing, which is different, is distinguishable, and every thing which is distinguishable, is separable by the imagination. This is another

this atomism in so far as concerns things-in-themselves (things as merely thought). Different things-in-themselves can be connected any way whatever. Hence the only way to know which way they are in fact connected is to look and see. This was Kant's critique of rationalism.[2]

But Kant, like most contemporary empiricists, thought there were necessary, hence *a priori*, judgments. His task in the Analytic was to reconcile this belief with his qualified atomism and the critique of rationalism based upon that atomism. To accomplish this, he divided necessary truths into two sorts, analytic and synthetic, and he effected the reconciliation differently in the two cases. Synthetic judgments do indeed assert connections of different facts. They are not, however, about things-in-themselves, but about phenomena. And atomism, while true of things-in-themselves, is false of phenomena. The Analytic is exactly the attempted proof of this statement. In the case of synthetic propositions therefore, the accommodation between atomism and the reality of necessary truths is managed by what Kant says about the *content* of such propositions.

In the case of analytic propositions, on the other hand, the reconciliation is effected by what is said about the *structure* of these propositions. Analytic propositions are about things-in-themselves, or at least they often are.[3] But this fact does not contravene the atomistic principle that whatever is different is separable. For an analytic proposition does not assert a connection of different facts. What its predicate refers to is either identical with or included in what its subject refers to.

principle. My conclusion from both is, that since all our perceptions are different from each other, and from every thing else in the universe, they are also distinct and separable, and may be consider'd as separately existent, and may exist separately, and have no need of any thing else to support their existence " (*Treatise* : ed. by Selby-Bigge ; Oxford, 1946, p. 233).

[2]See *e.g.*, *Critique of Pure Reason*, B 64-66.

[3]This is, at least, the way Kant is interpreted by Lewis White Beck, who uses 3950 of the *Reflexionen* as his authority. See his " Can Kant's Synthetic Judgments Be Made Analytic ? " *Kant-Studien* XLVII (1955-56), p. 173.

Actually, of course, Kant's position on this matter is far from unambiguous. In most of the *Critique* (and especially in the section " On the Ground of Distinction of all Subjects into Phenomena and Noumena ") he seems to say that no judgments whatever can be about things-in-themselves. For in order to make a judgment about a thing-in-itself we should have to have a concept of it. But such a concept would have no empirical content and hence would not be a concept at all but a mere form of judgment. Or rather, he adds, the concept is merely " problematic " and " limitative ". The difficulty of knowing just what Kant means by these terms—of knowing, that is, whether there are concepts of noumena or not—is notorious.

Fortunately, my point does not depend upon resolving this difficulty. For there can be no doubt that Kant does handle the problem of how there can be *a priori* truths differently in the two cases of analytic and synthetic judgments. Even if we suppose it to be Kant's view that no judgments whatever can be made about noumena, the reasons for this view are different in the two cases. In the case of synthetic *a priori* judgments, the reason they cannot be about noumena is that this would be incompatible with their being necessary and *a priori*. In the case of analytic judgments, the reason would have nothing to do with their *a priori* character, but would consist in Kant's doubt as to whether we have any concepts of noumena out of which to construct any judgments whatever, either necessary or contingent, about them. Put it this way : if there *were* any meaningful judgments about noumena, Kant would find no difficulty in their being *a priori* and necessary provided they were analytic. This is obvious throughout Kant's works : *a priori* truths are a problem to him only when they are synthetic (Kant, *op. cit.*, B 27-28). And the reason analytic truths are no problem to him is that, in virtue of their structure, they simply explicate what is already known.

Contemporary empiricists are also atomists, in the sense I have given that term. To them, as to Kant, it is incredible that two events which are independent of the mind can be both two and yet necessarily connected. But unlike Kant, contemporary empiricists believe that the world which truths are about (' matters of fact ') is independent of the mind. Or rather, they believe it is independent of the cognitive act through which we know it.[4] The resurgence of empiricism at the beginning of the twentieth century was a direct consequence of Moore's and Russell's realist analysis of the relation between cognitive consciousness and its objects. If there were any synthetic *a priori* propositions, therefore, they would be about necessary connections of different events in an independent world. And this would contradict atomism. Accordingly, contemporary empiricists reject Kant's theory of the synthetic *a priori*. Their rejection of it is exactly the second of the two definitions of empiricism.

But also, contemporary empiricists often hold that no analytic proposition could be about independent reality. This is the former of the two definitions stated at the beginning. It is not easy to understand why so many empiricists feel it essential to differ with Kant on this point. To be sure, Hume says that necessary propositions are about ideas, not matters of fact, but he gives no evidence for this assertion, and seems to make it in the same loose way in which Locke says that all propositions are about the connections of ideas. Perhaps some empiricists simply transfer to the analytic *a priori* what Kant said of the synthetic *a priori*—viz., that it is not about an independent world—without stopping to consider that, in Kant's views, this transference is unnecessary, since an empiricist must deny either that necessary propositions are synthetic or that they are about an independent world, but need not deny both.

Let us consider first the formulation of the empiricist-rationalist issue in terms of the analyticity of necessary propositions. As I have indicated, empiricism's rejection of the synthetic *a priori* rests directly upon its atomism. In the empiricist's view, the reason there can be no necessary synthetic propositions is that there are no necessary connections of different facts.

But we must be clear what we mean by ' different '. This term may mean something like ' clearly and distinctly conceivable in isolation '. That is what the traditional rationalists meant by ' individual substance ', their equivalent of ' different thing '. But since the ' conceivable ' expresses logical, not psychological, possibility, this amounts to defining ' different ' in terms of the absence of necessary connections.[5] In this sense of ' different ', if there were necessary connections between ' two ' things, they would

[4]Thus even phenomenalists hold that the possible sense-data predicted are independent of the act which predicts them.

This is an additional reason, incidentally, why it is irrelevant to my point whether Kant actually thought that analytic judgments are about things-in-themselves. For he certainly thought that they could be about the uncategorized manifold. On this point, *Reflexion* 3950 leaves no doubt. And the manifold is independent of the judgment which knows it.

[5]As Descartes and Spinoza, at least, were explicitly aware.

not be two different things at all, but one. It becomes an identical proposition that there are no necessary connections of different facts and hence that all necessary propositions are analytic. Hume's principle that whatever is different is distinguishable and separable becomes the rankest tautology. Surely none of the traditional rationalists meant to deny this tautology.

Or one may mean by 'different' something like 'distinguishable in any way whatever, in any sort of thought or experience, however incomplete or confused'. This is obviously what Hume meant by it. Because 'different' is thus ambiguous, I shall not use it. Instead, I shall use the term 'distinguishable' to express the notion explained in the first sentence of this paragraph, and the term 'distinct' to express the sense defined in the last paragraph. Now there is a real question whether all distinguishable facts are also distinct, whether, that is, there are any necessary connections among distinguishable facts. Philosophers have actually differed on this question. Some, many of them so-called 'rationalists', have held that there are many distinguishable things which, just because they do have necessary connections, are not really distinct, but 'moments' of a larger totality. And Hegel held that there is no distinct fact short of the Absolute Fact, though surely he never meant to deny that he could distinguish his towel from his bath water. Some other philosophers, many of them empiricists, have held that the universe has looser joints than that.

But this is a disagreement in metaphysics. It is simply the old issue between monism and pluralism, the issue of Hume's atomism. For to ask whether everything that is distinguishable is distinct is just another way of asking whether everything that is distinguishable is, as Hume put it, separable. Over and above this question of how many separable things there are, there is no further question about whether all *a priori* propositions are analytic. For to deny that there are synthetic *a priori* truths is only a way of saying that everything distinguishable is separable. And to affirm that some *a priori* propositions are synthetic is just a way of declaring that not all distinguishable things are separable.

The effect of defining empiricism in terms of the analyticity of *a priori* propositions is, therefore, to equate empiricism with atomism, rationalism with any philosophy more monistic than Hume. This equation is of course quite legitimate,[6] provided one is aware of what one has done. Confusion arises only if one thinks that, in addition to the old issue which divided the pre-Socratic philosophers, and has occupied all philosophers since, there is a new issue, the issue between rationalism and empiricism, which finally got itself clearly formulated toward the end of the eighteenth century.

According to the other definition stated at the beginning, rationalism is distinguished from empiricism by its conviction that there is *a priori* knowledge of independent reality. This an empiricist denies. The empiricist believes, instead, either that *a priori* propositions are not about anything at all, having syntactic but not semantic meaning and occurring improperly

[6] One has the precedent of William James.

in an ' object language ' ; or he believes that such propositions are about the ' controllable ' interpretations which we ourselves put upon reality—i.e., about our concepts or our language, depending upon the orientation of the philosopher concerned.[7]

But why do empiricists hold that *a priori* propositions cannot be about an independent reality ? So far as I can see, the only argument an empiricist could give is the following.[8]

A. The *evidence* for any proposition whatever must be directly inspectable, knowable by acquaintance. Otherwise it would not be evident, but would require evidence. But there are only two sorts of entities which are inspectable. Sense-data are inspectable, acquaintance with sense-data being what we call sensation. It is sensation which, by definition, warrants *a posteriori* judgments. Concepts (criteria-in-mind, classification-schema) and/or the implications of our linguistic decisions are also inspectable, since they are not ' out there ' or ' in the future ' but wholly open and available here and now. Acquaintance with such entities is what we call reflection or introspection. It is reflection upon our concepts and/or linguistic meaning which, again by definition, warrants *a priori* propositions.[9]

What, then, of independent realities ? On the assumption that sense-data are parts of independent realities, these realities can indeed be, in part, inspected. But in that case, since the inspection involved would be sensation, any proposition it warranted would be *a posteriori*. On any other assumption, independent realities cannot be inspected at all.[10] Consequently no *a priori* judgment can be warranted by inspection.

B. But if *a priori* propositions cannot be evidenced by inspection of realities, they cannot be *about* such realities. A proposition can be about one thing and evidenced by another thing only if there is some knowable connection between the two things. In the present case, our concepts or meanings could be taken as evidence for a truth about an independent reality only if there were some knowable connection between these ideas or meanings on the one hand and independent reality on the other. Further-

[7]Not all empiricists hold this. Lewis, for example, believes that there is a class of analytic propositions which is about independent reality. Still, it seems to be the predominant view.

Instead of saying that *a priori* propositions are not about reality, empiricists are more likely to say that they are not about matters of fact or that they are not factual. Sometimes these terms seem to be equivalent to ' contingent '—but in that case, of course, the whole position is a tautology with which no one would think of disagreeing. If empiricism is to be other than an obvious tautology, these terms must mean something like ' independent reality '.

[8]In order that I may later be able to refer to two successive stages of this argument, I am going to label them A and B.

[9]The difference between sensation and reflection might be held to be that between two distinctive modes of consciousness. Or it might be held to be a distinction between the distinctive sorts of objects of one mode of consciousness—i.e., ' sensation ' might be defined as direct awareness of a distinctive sort of entity, ' reflection ' as direct awareness of another sort of entity.

[10]Again, this statement holds even for the phenomenalist, for the future sense-data predicated cannot be inspected at the time (or, more accurately, by the same act) as they are predicted.

more, the connection would have to be necessary and known *a priori*.[11] But, by part A of the argument, independent reality cannot be directly inspected. Hence, one end of the supposed concept-reality connection cannot be inspected. Therefore the connection cannot be established by inspection, i.e., it cannot be known *a priori*.[12]

The crux of this argument is the contention that independent realities are not open to direct inspection, except possibly by sensation. I propose to grant this assertion with respect to concrete, temporal particulars—with respect, that is, to what Plato calls Becoming, Spinoza the common order of nature,[13] and most contemporary philosophers existence as opposed to essence. I grant it because I cannot think of any philosopher who has ever held that we could inspect existence except by means of sensation. What rationalists have held is that *a priori* truths are founded upon inspection of a quite different sort of reality—a reality which has been called Being, Ideas, God or Nature, possibilities, essences, or eternal verities, a sort of reality which I shall call Platonic reality. And it is this 'rationalist' view with which, apparently, empiricists disagree.

I say apparently, for in fact most empiricists do not locate their dispute with rationalism in this way. That they do not is due to a curious view they take of what rationalism is. According to this view, rationalism is the doctrine that truths about independent reality may be known *a priori*. That means, they may be known by pure reason. And *that* means, empiricists think, that they may be known by reason*ing*, by a sort of juggling of concepts or ideas 'in the mind'. In other words, the empiricist thinks of rationalism as the doctrine that *a priori* truths are evidenced by dialectic, by 'proof', by what Aquinas called 'composition and division'.

Obviously, with this picture of what rationalism is, the empiricist has little trouble refuting that doctrine. For juggling of concepts could give us knowledge of independent reality only if there were some necessary correspondence between our modes of juggling and the character of independent reality. But that cannot be established, as was proved in B above.

I think I have not caricatured the empiricist's conception of rationalism. But that conception is itself surely a caricature of the original.[14] Typically,

[11] Kant, *op. cit.*, B 65.

[12] In paragraph B of this argument I have simply re-phrased in terms of the *a priori* Hume's argument with respect to external things: that external things could be evidenced by impressions only if we knew of a connection between external things and impressions, whereas in fact we cannot know this, since, by Berkeley's arguments, external things are never observed, and hence their connections, if any, with impressions are never observed.

It is only by some such argument as this that I can see how the empiricist could get from the first part of his case—that the *evidence* for an *a priori* proposition cannot consist in an inspection of independent realities—to the conclusion of it—that therefore *a priori* propositions cannot be *about* independent realities.

[13] Or "existence in relation to a fixed time and place".

[14] It may or may not be a roughly correct understanding of certain 19th century doctrines. About this I am not really competent to speak. It is certainly not a correct interpretation of 17th century rationalism. And it is almost certainly not a correct interpretation of Platonic rationalism.

rationalism has not held that *a priori* knowledge consists in *judgments* about something uninspectable. *A priori* knowledge is not supposed by rationalism to be prior to all inspection whatever, but only to sensuous inspection. Reason, for a rationalist, is not fundamentally reason*ing*, but rational seeing—intuition, the third kind of knowledge, clear and distinct ideas.

Thus, as William Earle has shown, the heart of rationalism is its belief that other modes of consciousness besides sensation and introspection are forms of acquaintance.[15] I shall follow the common practice of allowing the term sense experience to cover introspection as well as sensation. I can thus describe rationalism as the view that there is such a thing as non-sensuous inspection or seeing. Empiricism, on the other hand, limits acquaintance to sense experience. Empiricism thus remains committed to the 'sensationalism' of Hume, in that only sensation and introspection are admitted as 'original' sources of data, all other modes of consciousness being but 'ideas' derived, by processes of compounding, abstracting, and so on, from these original data.[16]

The disagreement, then, concerns the structure of consciousness. The empiricist implicitly assumes that this structure is to be analyzed in the idealist fashion of the British empiricists rather than in the realist manner.[17] Or rather, this is what the empiricist assumes about non-sensuous consciousness. Of sensuous consciousness, more empiricists than not would perhaps give a realist account. They reject, that is, the idealist view that to perceive something is to 'have a perception'—to have 'in the mind' some sort of image or impression which may or may not 'agree' with that of which it is a perception. Since the work of Moore and Russell, the British empiricist language of sensations and impressions has been largely supplanted by the language of acquaintance and givenness. 'Having an impression' is looked upon as a confused way of saying that one is directly aware of a certain datum, that this datum is given to awareness. In the situation expressed by "red patch here-now", there is not present any Berkeleyan entity called 'a sensation of a red patch'. Rather, there is simply the intensionality of consciousness directed toward a red patch here-now. This is what I mean by a 'realist' analysis of the structure of consciousness.

But empiricists do not extend this realist analysis to modes of consciousness other than the sensuous. Such modes of consciousness as imagination or thought or memory are analyzed in the idealist fashion. If non-sensuous consciousness were analyzed in the realist manner, then 'having an idea

[15] *Objectivity* (New York: The Noonday Press, 1955), *passim*. In his paper, "The Ontological Argument in Spinoza", *Philosophy and Phenomenological Research*, XI (1951), pp. 549-554, Earle has demonstrated this in detail in the case of one typically rationalist assertion—the ontological argument. He there most clearly shows that, in the case of Spinoza at least, the ontological argument was not really an argument in the sense of a chain of reasonings leading from premise to conclusion but rather a *description* of the nature of a being with which one may be directly acquainted.

[16] See, *e.g.*, Kant, *op. cit.*, B1, 33.

[17] I am using these terms in their epistemological, not their metaphysical, sense. A realist believes that an act of consciousness has an object which is essentially independent of that act itself. An idealist, on the other hand, thinks that acts of consciousness do not really have objects at all, the so-called "object" being part of the act itself, its 'content'.

of Pegasus ' would be a confused way of saying that one is thinking of Pegasus, just as ' having a sensation of a red patch ' is, for a realist, a confused way of saying that a red patch is given. Instead, the empiricist supposes that the opposite of this is the truth—that ' thinking of Pegasus ' is a confused way of saying that one has an idea of Pegasus. Pegasus, the empiricist assumes, is not given to the mind in the same way the red patch is. Pegasus can ' enter ' the mind only by means of the idea or concept of him. We can be directly acquainted with the idea of Pegasus (since introspection is a form of acquaintance) but not with Pegasus. It is this idealist view about the structure of non-sensuous consciousness which underlies the empiricist's conviction that Platonic realities, such as Pegasus and God, cannot be inspected. It is therefore the basic point of issue between empiricism and rationalism.

Because for the rationalists, reason is, ultimately, an *act* of direct sight.[18] And even reason*ing* consists in tracing the relations of Platonic realities, not the relations of ideas of these realities. For the empiricist, on the other hand, reason is a *faculty*. This faculty has two functions. First, it manufactures, out of the data given to sensuous consciousness, things called ' ideas'. These ' ideas ' are not specific seeings, specific presences of the world, but rather an addition to the furniture of the world, mental duplicates or faint copies of their ' objects '.[19] Secondly, reason has the function of reason*ing* about these ideas with the aim of *judging* whether ' they ' correspond to a reality. It is because he analyzes reason in this fashion that the empiricist invariably says that ' rational intuition ' is nothing but psychological obviousness or strong conviction. For the rationalist, who thinks of rational intuition as direct sight, there is no judgment to be strongly convinced of. There is only something to be seen or not seen, something that makes itself *evident* or fails to do so. For the empiricist, who thinks of reason as a faculty of making judgments about the connection between ideas on the one hand and uninspectable realities on the other hand, ' self-evidence ' becomes simply the strong conviction that in some particular case this connection does in fact hold.

I shall not try to judge where the truth lies in this matter, but I may note that there are no obvious reasons to think that the empiricist view is the correct one. I fear that recent empiricist literature on this subject consists largely in facetious remarks about golden mountains and winged horses, interspersed with paeans to the theory of descriptions.[20] The arguments against realism which constituted so large a part of the philosophical

[18]Kant at least recognized the possibility of such an understanding of reason. Reason, so conceived, he called " intellectual intuition ", and he even supposed that superhuman beings might possess this sort of reason (*op. cit.*, B 71-72).

[19]If the empiricist is a metaphysical realist, ideas are duplicates of external realities. If he is a phenomenalist, they are duplicates of actual and possible sense-data.

[20]Kant, unlike contemporary empiricists, at least attempted to *prove* that human intuition is sensible, not intellectual. The basis of his proof is his view that the human intellect is not intuitive, but a faculty of *synthesis*, of *judging*. But in the end his proof seems circular. For the only reason he has for thinking that reason is a faculty of synthesis is that otherwise all knowledge would be *a posteriori*, so that we should be driven into Hume's scepticism. Whereas actually there is a third possibility : that reason is intuitive.

literature from 1910 to 1950 are largely irrelevant in the present connection. For they are directed against the possibility of there being direct intuition of concrete, temporal particulars. And in one way or another all of these arguments consist in pointing to incompatibilities between what is directly given to sensuous consciousness on the one hand and what exists in nature on the other hand. But these incompatibilities are due to the fact that only a limited number of things can exist in nature, to the fact that there is not *room* in nature for all of the peculiar things that are given to consciousness.[21] And this consideration has no weight against the rationalist view that *Platonic realities* are given to *non-sensuous* consciousness. For the Platonic world is infinitely populous, and contains an infinite ontological space to accommodate its population. There is room for everything which can be thought.

Nor is the theory of descriptions itself an argument for the empiricist view. That theory, if tenable, provides an alternative to the view that reason is a form of acquaintance, but it certainly does not in itself show us why we should adopt that alternative. If we are temperamentally inclined to be parsimonious in our ontology, the theory of descriptions may well offer a means of carrying through this idiosyncrasy. But few empiricists would want to admit that empiricism is only a personal peculiarity. And in any case, *if* the rationalists are right that non-sensuous consciousness is in fact a form of acquaintance, then the theory of descriptions would simply blind us to a part of what is, by re-defining the terms which refer to this part of reality in terms of names referring to sense-data.

But I do not want in this paper to try to settle the matter. I want only to point out that insofar as empiricism is defined as the view that no *a priori* propositions are factual, it is nothing but idealism in logomachous dress. I do not mean by this to equate empiricism with metaphysical idealism or phenomenalism which deny either the existence or the knowability or the conceivability of independent realities. But I do mean to identify it with the sort of analysis of the structure of consciousness which, when extended to all modes of consciousness, makes such denials possible, plausible, and perhaps even required. For what the empiricist assumes about non-sensuous consciousness is exactly what the idealist assumes about consciousness in general—that each instance of it consists, not in two things, an act of acquaintance and the object of that act, but in one thing, an idea. The empiricist may follow the British empiricists in giving an idealist analysis of sensuous consciousness. Or he may follow Russell and Moore in giving a realist account of it. But he invariably gives an idealist analysis of non-sensuous consciousness rather than the realist account of it given by rationalism. The issue between the two parties is the ancient one of whether consciousness is pure intensionality, as the realists would have it, or whether it is something that ' contains ideas ' as the idealists think. Over and above this issue, there is no further point of dispute, called the rationalism-empiricism issue, which finally got itself clearly formulated only with the coming of the ' new techniques of logical analysis '.

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[21] Or, anyway, in the three-dimensional ' substance ' nature of Galileo and ' common sense '.

DISCUSSIONS

VALUES AND IDEAL-LANGUAGE MODELS

In a recent article in *The Philosophical Quarterly*,[1] Herbert Hochberg argues that " a reconstructed moral sense view provides an adequate explication for philosophical problems about value ".[2] I shall maintain :

(1) That Mr. Hochberg's " reconstruction " does not do justice to the moral sense view ; in particular it does not adequately differentiate non-natural from natural predicates.

(2) That the senses in which " objectivity " can be attributed to values on Mr. Hochberg's view do not do justice to the common sense notion of objectivity as he claims.

(3) That his analysis does not constitute a basis of support for the moral sense view as he claims.

Mr. Hochberg effects the reconstruction of the moral sense view by transcribing it into an ideal language. In this language, values are designated by basic undefined terms, such that the terms are " interpreted in terms of the root meaning of one of the value terms of our ordinary language ".[3] The purpose of the special notation for va ue terms is to grant them special status as " non-natural " predicates. The reconstruction is phenomenalistic in the sense that the undefined terms of the ideal language refer to phenomenal entities and properties of phenomenal entities.

I

Considering the ideal-language construction as a model of an ethical system, we can ask to what interpretations the model is amenable. In particular, consider the two kinds of notations for predicates. In Mr. Hochberg's interpreted system, the two kinds of notations differentiate natural and non-natural predicates. But there is no reason why the two kinds of notations could not be interpreted as denoting, for example, predicates of size and of colour, or any other classes of natural predicates. Such an interpretation, that is, of the two kinds of notation as designating two classes of natural properties, does no violence to the model. Yet our common-sense view is surely that non-natural predicates differ in some more fundamental way from natural predicates than, for example, predicates of size from predicates of colour. It is obvious that the distinctive features of non-natural predicates have not survived the transcription into the ideal language.

[1] Hochberg, Herbert, " Phenomena, Value and Objectivity ", *Philosophical Quarterly* July 1958.

[2] *Ibid.*, p. 208.

[3] *Ibid.*

II

The second point, mentioned at the beginning of the paper, is that the senses of objectivity, which Mr. Hochberg says can be ascribed to values on his reconstructed moral sense view, do not do justice to our common sense meaning when we say values are objective.

Mr. Hochberg maintains that, on the reconstructed moral sense view, values may be said to be objective in three ways :

(1) In the sense in which ' objective ' denotes " existence " or " reality ".
(2) In the sense in which ' objective ' means that statements about values may be true or false.
(3) In the sense in which ' objectivity ' means agreement on propositions about values, or " intersubjectivity ".

Regarding (1), Mr. Hochberg says : " If one considers, as I do, that the existents, in the philosophical sense of that term, are given by the undefined descriptive terms of the ideal language which, in principle, must be able to account for all areas of our experience, then on all our alternative reconstructions of the moral sense position, value exists. For all have included among the inventory of undefined terms at least one undefined value predicate ".[4]

This is a very weak sense of ' objectivity ' ; one to which few people would object. Even the most thoroughgoing subjectivist would grant objectivity in this sense. It says no more than that there *is something* designated by value terms. One might well admit this sense of ' objectivity ' and without contradicting himself maintain a position, for instance a form of relativism, which we characterize as denying the objectivity of values.

The addition of the second sense of ' objectivity ', that is, the sense in which statements about values may be true or false, still leaves us short of the common sense notion of objectivity. In fact, as this sense is presented by Mr. Hochberg, it, too, is a sense in which nearly everyone would grant that values are objective. To predicate a value character in the ideal language is to maintain (1) that there is a phenomenal entity that exemplifies the value character and some other character, (2) that there is a phenomenal entity that exemplifies the value character and no other, or (3) that there is an " awareness " whose content exemplifies value properties. The sentence ' X is beautiful ' can be true or false in most ethical systems. The evidence required to establish the truth or falsity of such a statement will vary greatly from system to system, but that does not affect the basic fact. What is usually intended by the statement " values are not objective ", is that, e.g., " beautiful " is not a property of an object, that is does not " belong " to an object, in the sense in which other properties belong to objects. To put it another way, the claim is that a value predicate is not a one-place predicate, as, for example, colour predicates are. Leaving aside any quarrel with Mr. Hochberg's phenomenalism, one could certainly say that what is meant by people who say values are objective is not adequately represented by objectivity as " existing " and as " being true or false ".

[4] *Ibid.*, p. 219.

It is precisely this element, the characterization of values as " belonging " to objects, that is missing in the ideal language analysis. Not even the third sense in which values are objective, the sense in which there is agreement on value-propositions, suffices to convey this meaning. Even a complete personal subjectivist, if anyone really holds such a position, can allow agreement on values, the agreement effected by training and convention. In other words, one can grant agreement on values without granting that values are properties of objects. Cultural relativism depends on just such an assumption.

A word might be said about the argument that in this system " inter-subjectivity " or " agreement on values " is possible. Although " there well may be quite a bit of disagreement about values ",[5] this is simply evidence of the difference between statements like " this is beautiful " and " this is red ". This does not impugn the objectivity of values. After all, there is no ultimate source of authority for statements like " this is orange ", so to ask for absolute agreement on matters of value is to seek " an objectivity for matters of value that is not even to be had by matter of fact "[6]. There are at least two things wrong with this argument. The first is that anyone would be satisfied with agreement on matters of value equal to—or even of the same order as—matters of fact. The way in which Mr. Hochberg states it, it sounds as though the only difficulty here is that more is demanded of value, when in fact a simple comparison of levels of agreement in matters of fact and value is sufficient to cast doubt on the objectivity of value. The second thing wrong is that one of the " differences " to which Mr. Hochberg alludes is a difference in the procedure for resolving disagreements. Even though there is no " ultimate authority " on matters of fact, only dolts, drunks and dogmatists ever get to the point of requiring one, while the need is ever present in matters of value.

III

The last, and most vexing, problem that arises from Mr. Hochberg's paper, concerns his meaning when he says this " reconstructed moral sense view constitutes an adequate explication of philosophical problems about value ".[7] Taken at face value, this is a very strong claim ; in this context I am not sure what kind of claim it is. I fail to see, that is, any sense in which a transcription of the moral sense view into an ideal language could conceivably constitute an adequate explication of philosophica problems about value.

Mr. Hochberg might have in mind the minimal claim that the model he has constructed accurately and precisely reflects the tenets of moral sense view. I have argued, in parts I and II, that this claim is subject to question. But even granted the adequacy of the reconstruction, the ethical

[5] *Ibid.*, p. 223.
[6] *Ibid.*, p. 223.
[7] *Ibid.*, p. 208.

system would still be subject to evaluation in terms of the philosophical problems about value.

A second claim which might be made is that the reconstruction states the philosophical problems precisely, and perhaps indicates the direction any proposed answer must take. For example, Mr. Hochberg might maintain that he has explicated the notion of " objectivity " as it applies to values, and has indicated what it means to say that values are objective. I have offered two reasons for questioning that this claim can be made: (1) The reconstructed moral sense view interprets " objectivity " in a way that differs greatly from the common-sense interpretation, and (2) it seems possible to hold that values are objective in all the senses Mr. Hochberg allows without subscribing to any other tenet of the moral sense view.

A third sort of claim is possible and, I believe, is what Mr. Hochberg has in mind. This would be to the effect that the moral sense view, as here presented, is an adequate answer to philosophical problems about value. That this is the intended meaning is supported by the following quotation: " In this section (III) I will cite some reasons, based on the above analysis, in support of a reconstructed version of the moral sense position ".[8]

Even granting that this is Mr. Hochberg's intention in saying a reconstructed moral sense position constitutes an adequate explication of philosophical problems about value, it is not perfectly clear what he means. His contention might be that transcribing the moral sense view changes the view in some way, thereby making it more adequate. But if that is the case then he cannot be said to have reconstructed the moral sense view; rather he has constructed a view that has some features in common with the moral sense view. Alternatively, it might be maintained that the more precise statement of the moral sense view makes clear the ways in which the view resolves certain philosophical problems about value.

It hardly seems necessary to point out that it will be the ethical system (in this case the moral sense position) and not the model of the system that will or will not constitute a solution to problems about value. That is, regarding any particular problem, for instance, the question whether values are non-natural properties; one must still argue that they are such properties. It will not do simply to assert the proposition, then show that on this assumption certain things follow (for instance that values are objective in certain senses), and then to maintain that a philosophical problem about values has been solved. Obviously, if we know that values are non-natural properties, then drawing out the implications of that fact is a useful enterprise. But drawing out the implications and maintaining that the results are in accord with the common sense notions about values does not establish that values are non-natural properties.

All this has bearing on Section III of Mr. Hochberg's paper. In this section he is concerned to argue in favour of the moral sense position. I wish to contend that even if his reconstruction of the position did justice

[8] *Ibid.*, p. 223.

to our ordinary meaning of ' non-natural ', and even if the senses in which values can be objective in his system accorded with the meaning we ordinarily attach to the statement " Values are objective ", he still would not have established that values are non-natural properties. The only proposition he could reasonably claim to have established is " If values are non-natural properties (in the sense defined) then values are objective (in the senses defined) ". I would not maintain that this is a trivial accomplishment, nor a useless exercise. But it is considerably different from the proposition that the reconstruction constitutes an adequate explication of philosophical problems about value.

Mr. Hochberg does argue that values are non-natural properties. The argument is, roughly stated : If there is a distinctive value experience, then a naturalistic interpretation of that experience is not adequate. There is a distinctive value experience. Therefore a naturalistic interpretation is not adequate.

There are three things to be noticed about this argument. (1) It does not establish the proposition, " Values are non-natural properties ". Even if we accept the entire argument, the disjunction between natural and non-natural properties does not exhaust the possibilities. Values might not be properties at all.

(2) The argument has nothing to do with this particular analysis. That is, it is independent of Mr. Hochberg's reconstruction of the moral sense position. The criterion, even if it is a valid one, could be applied without reference to an ideal language reconstruction. Thus even on Mr. Hochberg's own ground it is not the " reconstruction " that constitutes an adequate explication of problems about value, but the moral sense position itself, and the reconstruction is only incidental.

(3) The contention that there is a " distinctive value experience " rests on the assumption that values are non-natural. It is not strange that, when ' distinctive ' means ' experienced in a different matter ', a naturalistic interpretation of values cannot produce a " distinctive " value experience. But the point is that we don't know whether or not our value experience *is* " distinctive " in this sense. We only know that it is distinguishable from other experience. That it is distinguishable may be because it is " distinctive " in Mr. Hochberg's sense, but it need not be.

The argument obviously does not serve to establish the contention that values are non-natural properties, but even more seriously it *does* point up quite clearly that the ideal language reconstruction is not capable of producing an " adequate explication of philosophical problems about value " in the sense intended. The method might have been sufficient (though I have argued that in this instance it was not) to achieve a more modest goal, that is, to state the moral sense view with some precision and make clear what is involved in certain philosophical problems about value.

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ON NOT SEEING DOUBLE

When Richard Taylor and Timothy Duggan, in their paper " On Seeing Double ", attempt to defend the astounding conclusion that many familiar objects around us have been appearing double all our lives without our knowing it, they have taken an indefensible position. In their article[1] Taylor and Duggan take note of an experiment made by Thomas Reid and recorded in his *Enquiry into the Human Mind*, the directions for which are summarized as follows :[2]

> (1) Look at any object a few feet or more distant, such as a candle-flame or a door knob ; (2) obtrude a finger into your line of vision ; (3) while still looking at the more distant object, *attend* to your finger, which will now be noticed to present the appearance of two somewhat blurry fingers. (It may seem *a priori* impossible to look at one thing and visually attend to another, but it is in fact quite easy.) Now, finally, (4) look at your finger, but attend to the more distant object ; the finger now appears as one, but the other thing as two.

The inference which Reid draws from this experiment,[3] and the one that Taylor and Duggan defend, is that, " Whenever we look at *anything at all*,[4] then *everything* roughly in our line of vision, hither or thither to the thing we are looking at, appears double, though we normally don't realize it".

But this is a queer thing to say ! How is it possible that something should appear to me *in any way* (let alone double) without my noticing it at all ? Isn't it true that an appearance itself is no more than what appears, or is *in some way* noticed ?

Taylor and Duggan's defence of Reid's conclusion consists in refuting three statements of possible ways out of the paradox of double vision (only the first two of which concern us here). The first statement is a rather weak one and Taylor and Duggan refute it easily enough, but let us consider it anyway for what it may tell us about the second possible way out. Basically, it is the position which holds that there is nothing in our visual experience except what we are directly attending to. This is obviously false, for if we suddenly removed all other things which we were not attending to, we would notice that something was missing.[5] " The hunter taking aim on a partridge surely *is* visually aware of the gun barrel, twigs and other things intervening ; if all these were suddenly annihilated, he would realize

[1] Taylor, R., and Duggan, T. : " On Seeing Double " (*Philosophical Quarterly*, April 1958, pp. 171-4).

[2] *Ibid.*, p. 171.

[3] Reid, T. : *The Works of Thomas Reid*, ed. Hamilton, pp. 164-165.

[4] Taylor and Duggan note here that the experiment is inconclusive for distant objects and certain only for objects within 15-20 feet. p. 172.

[5] Taylor, R., and Duggan, T., *op. cit.*, p. 173.

that something, to which he was not attending, had suddenly *dis*appeared, leaving only himself and the partridge". This, of course, does not prove that there are completely *un*noticed sense data, but only that there are certain data which are noticed more clearly than others. Thus, the partridge is most clearly noticed, but the twigs, etc., are noticed also, although vaguely.

Taylor and Duggan believe that we can say that these vague appearances are actually double, even before we directly *attend to* them. Otherwise, they say, we would be committed to the view that these are not double *until attended to*, which is, *ad hoc*, vacuous, and which ascribes the extraordinary power of being able to double appearances to the mere act of *attending*.

Indeed we would be committed to this view, but it is a sufficient one to answer Taylor and Duggan. First, let us consider the charge that it is vacuous or that there is in principle "no way of confirming or disconfirming it, since no one can check on the characteristics of unnoticed appearances". Of course it would be impossible to check on unnoticed characteristics of appearances, because there are no such things. True, there are characteristics which are not directly *attended to*, but we can't say that to check on these would be to check on unnoticed characteristics, for these *are* noticed —they are merely vague. In point, Taylor and Duggan have confused their own terms—*attended to* and *noticed*. There are many things in a visual sense datum which are *unattended to* (the gun barrel, twigs, etc., in the previous example), but these do appear in some way; they are not *unnoticed*. If they were completely *unnoticed*, then removing them from the visible sense datum (as Taylor and Duggan suggest in their argument) would be impossible. In short, something may be *unattended to*, although not completely *unnoticed*. Consequently, we are entitled to check on their characteristics, and when we do we find that the only way we can accurately describe them is to say that they are vague—not single, not double, but simply vague. If one admits that a certain part of an appearance is vague (as Taylor and Duggan would be forced to do) then to go further and infer from Reid's experiment (or any other) that this part of the appearance is actually double would be simply nonsense. If a part of an appearance is admittedly vague, then it is vague and that is the end of the matter. If it is double or even vaguely double, then that would be noticed, and by admission it is not.

The article "On Seeing Double" also suggests that such a view as my own ascribes the implausible power of being able to double appearances to the mere act of *attending to* an object. A simple suggestion, however, shows that this is really not so extraordinary a power. The whole impact of Taylor and Duggan's article comes from the fact that their conclusions supposedly are about normal vision. If, on the other hand, they had attempted to prove that double vision occurs under special, abnormal conditions, then their conclusions would have been less significant, and considerably less shocking. Yet, in reality, this is all that they have succeeded in doing.

If one could show that the conditions of Reid's experiment violated one of the conditions of normal vision, then he would thereby disqualify Reid's

generalization. Although I now might attempt to give a complete account of "normal" vision (perhaps including requirements such as freedom from ophthalmic disease, certain minimal environmental light conditions, etc.), I think it would be readily admitted that freedom from excessive strain should be included in this account. Actually, there are many ways in which I can strain my vision, resulting in abnormal, doubled appearances. If I cross my eyes or push my eyeball with my finger, I begin to see double. Appearances are single and normal for me until precisely the time when I push my eyeball. Then suddenly, due to the strain, my images become double. Likewise, when I focus upon some object and yet *attend to* a finger which I have obtruded into my line of vision, I introduce a strain on my eyes which results in double vision. In trying to look at one thing while *attending to* another, I am actually straining to see two things at once. This is quite difficult when both things are in the line of vision. The effect is as if I had crossed my eyes or pushed my eyeball with my finger. To prove to yourself that there is this strain, merely attempt Reid's experiment. Of course, there is no such strain in normal vision and there is, therefore, no reason to suppose that it too is double vision.

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CRITICAL STUDY

The Self as Agent. By JOHN MACMURRAY. (London : Faber & Faber. 1957. Pp. 230. Price 25s).

Though I say it who shouldn't, the University of Glasgow is to be congratulated on having invited Professor Macmurray to give a set of Gifford Lectures. Professor Macmurray's thinking is always suggestive and often penetrating, though not as close or clear as one might wish. Up to now he has used a relatively small scale for his published works, and I for one am glad to have heard and now to read a more sustained exposition of his ideas.

His two series of Gifford Lectures bore the overall title ' The Form of the Personal '. It is, in a way, a pity that the first series should be published separately in this volume. Professor Macmurray often has to remind the reader that what is said here will need to be qualified in the second volume, entitled ' Persons in Relation ' ; and, having listened to both sets of lectures, I can say that they form a well-knit unity.

Professor Macmurray argues that traditional philosophy, especially in the modern period that began with Descartes, runs into insurmountable difficulties because it is conducted from the standpoint of the thinking subject. The standpoint is theoretical and egocentric. It leads to solipsism and tends increasingly towards atheism. Professor Macmurray proposes a new start made from the standpoint of the practical agent, the thinking subject being taken as secondary, an abstraction from the whole person. He believes that this approach will indicate methods of extrication from the *impasse* reached on crucial philosophical problems, and he also thinks that it can yield some rational grounds for religious belief.

He goes on to say that a consideration of the history of modern philosophy in relation to the development of science confirms the suggestion that philosophy should now be concerning itself with " the form of the personal ". The first stage of modern philosophy was occupied with elucidating the form of the material, corresponding to the development of the physical sciences ; the second with the form of the organic, corresponding to the development of the biological sciences. The emergence of the psychological disciplines as a separate body of sciences requires a corresponding emergence in philosophy of the form of the personal. I am not clear just how Professor Macmurray distinguishes a ' form ' from a ' logical form ', but at any rate he regards the logical form of the material as mathematical, and that of the organic as dialectical. This means that he takes dialectical logic seriously as the proper schema for representing the processes of organic behaviour. Neither mathematical nor dialectical logic, however, suffices to represent

the structure of action, the form of the personal; and he proposes what purports to be a new logical form for this.

Professor Macmurray does not claim that he is entirely original in his break with tradition. Kierkegaard and modern Existentialism have seen the defects of dialectical or organic philosophy, and have turned their attention to the person as agent. But in their rejection of earlier logical forms, they have tended to eschew logical method altogether, and this is to abandon *philosophy*. On the other hand, Logical Empiricism has insisted upon closer attention to logic, but has turned aside from the substantial issues to concentrate upon method. Professor Macmurray wants to combine the virtues of both Existentialism and Logical Empiricism. He is certainly clearer than the Existentialists in dealing with substantial problems and explaining what it is to be a person. Whether he is equally successful in his aim of setting out a logical framework is open to doubt.

Although the method followed by Logical Empiricists is that of mathematical logic, and so inadequate in Professor Macmurray's eyes, he makes the shrewd point that, in attending to *language* rather than thought, these philosophers have broken out of the egocentric circle drawn by Descartes' *Cogito*. I should myself add that the second defect of traditional philosophy, its theoretical basis, is to some extent rectified in the preoccupation of contemporary linguistic philosophy with the pragmatic dimension of language. Logical Empiricism has been succeeded by Logical Pragmatism.

Professor Macmurray's proposal for a new logical form is a very different matter from the logic of practical language investigated by the "neo-Wittgensteinians"—to use Professor Everett Hall's label. My own label of 'Logical Pragmatism' raises the obvious question whether Professor Macmurray's "standpoint of the practical" is not just a revival of Pragmatism. His first volume would indeed suggest that his ties with Pragmatism are even closer than those with Existentialism. He would probably agree that Pragmatism makes the transition he desiderates from a theoretical to a practical standpoint. There are, however, important differences between his own approach and that of Pragmatism as he understands it. These differences were discussed in his second series of lectures and do not show themselves in this first volume. Just as the thinking subject of Cartesian philosophy is an abstraction from the practical agent, so the agent considered alone is an abstraction from the person, who is in community with other personal agents. Pragmatism, of course, allows for the fact that men live in societies, co-operating and competing with each other. But Professor Macmurray would say that the life of community, of love and friendship, is what makes men persons.

One alleged difference from Pragmatism is briefly mentioned in the present volume. Professor Macmurray holds that "theoretical activities . . . find their meaning and their significance in the practical field. . . . The truth or falsity of the theoretical is to be found solely in its reference to the practical. . . . It is always legitimate to ask, of any theory which

claims to be true, what practical difference it would make if we believed it ". These statements, he points out, do not imply a pragmatic theory of truth (pp. 21-3). Yet so far as *metaphysical* beliefs are concerned, he seems ready to take a straight-forwardly pragmatic criterion of their truth. He says (p. 221) that the practical effect of such a belief is to determine a way of life, " and the satisfactoriness or unsatisfactoriness of that way of life is its verification ".

By a metaphysical belief Professor Macmurray means a proposition in which the whole of our experience is considered as a unity. The metaphysical proposition that he himself puts forward is the conception of the world as one action. He argues against the alternative unitary conception of the world as one process, on the ground that the idea of a process, which includes that of a continuant undergoing change, is an abstraction from our experience of action as agents. A number of individual actions may be thought of as parts of one greater action, as when, for example, a battle, with all its constituent acts, is called an action. Here the many acts of individual men at one time and in one place are considered to be unified by a common intention. Somewhat similarly, the acts of a group of men over a period of time may be seen as exhibiting a continuity of intention, as when a historian speaks of the continuity of British foreign policy in the nineteenth century. History indeed, Professor Macmurray suggests, is ideally the attempt " to represent the whole human past as if it were the memory-content of a single agent " (p. 211), a record that would link past with present in a continuity of action. Following this clue, we may frame a unitary conception of all that men do and experience as being all part of one action. Action includes process, and also implies intention. Since much of the process included in the cosmic " action " is not part of human intention, the idea of the world as one action seems to involve the thought of a supreme Agent. This is how Professor Macmurray hopes to provide grounds for religion by taking the standpoint of the agent. The metaphysical belief, thus stated, is simply a possible hypothesis. Its verification, as " determining a satisfactory way of life ", is to be given in the second volume, where its practical effect on the relations of persons will be considered.

Verification of the practical standpoint in the present volume is confined to showing the effect of that standpoint on a number of traditional philosophical problems, such as perception of the external world, the relation between space and time, our knowledge of other persons, the alleged dualism of mind and body, and the issue between determinism and free will. Here I must limit my discussion, and I select for comment Professor Macmurray's interesting treatment of perception.

Philosophical theories of perception, Professor Macmurray points out, have tended to be primarily theories of vision, and their bias has often infected theories of knowledge in considering knowledge as analogous to vision. This is a distortion of the experience of an agent, because vision is purely receptive or passive. Seeing has no causal effect upon the object

seen. It is a withdrawal from action. " In consequence, the visual model tends to instigate a strong contrast between knowing and acting " (p. 106).

Professor Macmurray himself regards knowledge as an element of action, and in his theory of perception he makes touch instead of vision the logically primary experience that informs us of the real existence of something other than ourselves. " I can only become aware of anything tactually by doing something to it. Tactual perception is *necessarily* perception in action. To touch anything is to exert pressure upon it . . . and therefore . . . to modify it. . . . The core of tactual perception is the experience of resistance. Now resistance is not a sense-datum. . . . It is essentially a practical experience. . . . It presupposes that I am doing something, that I am in action, and that I am prevented from achieving my intention. . . . Resistance, therefore, is a frustration of the will. The experience occurs only when I am prevented from doing something that I am trying to do " (pp. 107-8).

Touch therefore gives me, as agent, a knowledge of something other than myself, something that resists my action. Visual experience, in which I am passive, does not give me direct knowledge of existing (i.e. causally active) things. Such knowledge as it may give is indirect, by enabling me to anticipate tactual experience. " All visual experience is the formation of an image in the Self : it becomes perceptual by being correctly referred to a future tactual perception. . . . To perceive by sight is to correlate the occurrence of visual imagery with tactual experience " (p. 112).

This view implies that tactual experience is always veridical, and so Professor Macmurray has to deny that there are any tactual illusions. He does so by distinguishing between touch and feeling. " In tactual perception, there are, strictly speaking, no illusions. What are often described as such are illusions of feeling ; and indeed it is misleading even to talk of tactual sense-data. Tactual perception is always perception in action. If we abstract from the action, we no longer have a perceptual element, but a feeling, that is, an element in the general coenaesthesia which is the awareness of our internal state " (pp. 112-13).

To make visual perception dependent upon tactual is of course reminiscent of the view put forward by Berkeley in *A New Theory of Vision*. The particular account of tactual perception given by Professor Macmurray also recalls a tale of Wordsworth's youth (cf. Price, *Perception*, p. 279, note) : " There was a time in my life when I had to push against something that resisted to be sure there was anything outside me ". It is, I think, less of a one-sided distortion than the visually-based theories to which Professor Macmurray objects. As he says, a man who is born blind can acquire knowledge of the world he lives in, but it is not really possible to conceive of a person who never possessed the sense of touch, let alone to conceive of his acquiring knowledge of things distinct from himself. Nevertheless, Professor Macmurray's account is to some extent one-sided, in that he carries it to undue extremes.

In the first place, it is not true that we experience resistance (" the core

of tactual perception ") only when we *exert* pressure, when " we are pre-prevented from doing something that we are *trying* to do ". I experience the resistance of the chair on which I am sitting, but I am not trying to fall through it. Secondly, can all so-called tactual illusions be classified as coenaesthetic feelings ? The examples of tactual illusions given by Professor Price (*Perception*, pp. 29-30)—such as feeling pressure upon an amputated foot, or feeling that a pair of fixed compasses drawn across the face diverge as they pass the lips, or feeling an after-image of the pressure of one's hat—can, I think, be so classified, since they do not conform to Professor Macmurray's criterion of touch as a form of action. But what of the illusion of " feeling two noses " when I cross two fingers and touch my nose with them ? It seems to me that this experience cannot be called simply a coenaesthetic datum, since I am deliberately doing something in touching my nose, and am not just having something done to me.

There is a further difficulty in calling all visual experiences images. Professor Macmurray notes that he must retain a distinction between image and percept. He wants to call all the objects of visual experience images, but to distinguish visual perception from non-veridical visual experience on the ground that the image in visual perception is correctly referred to the possibility of tactual experience ; in non-veridical visual experience we have either an image with incorrect reference or an image with no reference to tactual experience. He appeals to the ordinary use of language to support his view that the distinction between percept and image is not between physical object and non-physical datum. A material thing may be called a graven image. What is seen in a mirror is called an image only when it is incorrectly located with respect to the possibility of tactual perception ; when we use a periscope we speak of seeing the thing and not an image of it. So far, so good. But ordinary language does not support the idea of calling something an image unless it is a *likeness* of that of which it is called an image. A mirage may be called an image, but if so it is an image of what we *see* when confronted with a real oasis, not an image of what we touch when we plunge into the water.

A mental image is so called because it is thought to be a replica of a percept. Professor Macmurray denies that it is. " The traditional view that images are derived from percepts is, so far as vision at least is concerned, the reverse of the truth. The capacity to form images is a prior condition of the possibility of visual perception " (p. 112). And the image formed when we visualize an object is an identical sort of image with the one formed when we see that object (p. 114). His account becomes more paradoxical when combined, as it apparently is, with the view that forming an image is the same as imagining. Professor Macmurray seems to hold that what is called a mental image is " *merely* imagined " (p. 113), while a percept is an image that is both imagined and referred to the field of action. But to make *imagining* logically prior to perceiving involves a vicious circle. To imagine a sunset is to imagine *seeing* a sunset, and to imagine thunder is to imagine *hearing* thunder.

I may have misinterpreted Professor Macmurray in supposing that he identifies forming an image with imagining. Perhaps he would say that to visualize something, say a cat, is to imagine seeing the cat in the sense that it is to form an image and to think of that image as if it could be referred to tactual experience while knowing that in fact it cannot. Then suppose I imagine stroking[1] the cat. If the visual image formed when I imagine seeing the cat is identical in kind with the image formed when I really see the cat, it would seem that when I imagine stroking the cat I must be forming a tactual image identical in kind with an image formed when I really stroked the cat. So the traditional view that percepts are logically prior to images must be denied of touch as well as of vision. Tactual perception also must include the formation of an image. In that case, what is it an image of (or to what other experience is it referred)? Another tactual "image"? Then the same question recurs for that one, and we have an infinite regress.

I must confess, however, that I am a little uneasy about the argument of the last paragraph, because the expression 'imagine stroking' (or 'imagine touching') sounds abnormal, while 'imagine seeing' does not. One may speak of 'imagining *oneself* touching . . .' as one may speak of 'imagining oneself seeing . . .', but that, I think, is a different matter. If I imagine myself stroking the cat, I am liable to form a *visual* image containing myself, or at least my fingers, as well as the cat; just as, if I imagine myself seeing the cat, I form a visual image of myself looking at the cat. What about the expression 'imagine *that* I am touching . . .' (or 'imagine that I am seeing . . .')? Is this just the same as saying 'imagine myself touching' (or 'imagine myself seeing')? I rather think not. All the same, the abnormality of the expression 'imagine touching' (or of more specific ones like 'imagine stroking' or 'imagine holding' or 'imagine pulling'), as contrasted with 'imagine seeing', may well be an indication of the basic soundness of Professor Macmurray's position that tactual and visual perception are not analogous.

I must leave aside Professor Macmurray's treatment of the other traditional problems mentioned earlier, only saying that his views are always stimulating, usually provocative, and often persuasive. I was particularly impressed by his account of time and space as, respectively, the form of action and the form of reflection. He points out that as subjects we spatialize time; we look back on a series of successive events, apprehending them simultaneously and representing temporal succession by a "line" or "path". Professor Macmurray's account of the mind-body relation is also of great interest, but I shall refer to it only incidentally in the course of comment on his primary theme, "the form of the personal".

The first phase of modern philosophy, Professor Macmurray tells us, took both its key concept of substance and its mathematical method from the physical sciences. Its problem was the form of the material. It broke down when it tried to make this form cover the whole of knowledge, and in

[1]But see next paragraph.

particular when it tried to think of the self on the analogy of material substance. The second phase took its key concept, of organism, from the biological sciences, and its problem was the form of the organic. According to Professor Macmurray, dialectical logic gives a correct representation of this as a synthesis of opposites, because an organism is a " harmonious balance of differences ". (So far as I can see, the move from ' differences ' to ' opposites ' is not given any justification.) But this form, too, fails to cover personal existence because, as Kierkegaard said, the life of a person exhibits " a dialectic without a synthesis " ; we have a tension of opposites, but it is resolved by choice and not by reconciliation. Professor Macmurray himself proposes the view that the logical form of the personal is " one in which a positive contains and is constituted by its own negative ".

In order to reach this conclusion, he first discusses the inadequacy of the *Cogito* as a starting-point. Even Kant, who saw that practical life is more fundamental than theoretical, went wrong in making ' I think ', instead of ' I do ', the first presupposition of all experience. Any philosophy which begins with the *Cogito* results in a dualism of thought and action, whereas by beginning with the concept of action we may see that thought is primarily a constituent of action. Professor Macmurray now takes the step of arguing that thought is the " negative aspect " of action. When abstracted from action, " its existence . . . is a non-existence " (p. 80), because it is not causally effective. " Thinking can only be defined negatively in relation to a positive activity which is material, causal and effective in the modification of the not-self. . . . If then I distinguish between action and thought . . . and if I wish to use an existential language to mark the distinction, I must identify my existence with action ; and my thinking with non-existence. I must say not ' *Cogito ergo sum* ', but ' *Cogito ergo non-sum* ' " (p. 81).

Translated into more mundane language, the statement that thinking is non-existent simply means that it is non-active. Now the identification of the existent with the active or causally effective, coupled with a recognition that there are degrees of activity, implies a doctrine of degrees of existence (cf. p. 87). This being so, Professor Macmurray is only entitled to attribute to thought a minimal degree, not an absence, of existence or activity. For he describes thinking without action as an activity of the mind unaccompanied by bodily activity (p. 86). Action includes thought, and when thinking takes place without action it is an attenuated activity. " Action . . . is a full concrete activity of the self in which *all* our capacities are employed ; while thought is constituted by the exclusion of *some* of our powers and a withdrawal into *an activity* which is *less* concrete and *less* complete " (p. 86, my italics). He himself admits, therefore, that thinking is the exercise of a degree of activity, and we may add that it can have some causal effects, e.g. in causing one to be tired (cf. p. 130). It is perfectly reasonable to say that thinking is primarily exercised as an element in action, but I do not see any justification for calling it a " non-existence "

or a " negative aspect " of action. Nor can I see any justification for saying that action (or any other " positive mode ") is " *constituted* by " thought (or the " negative mode ") when the second is a necessary but not a sufficient condition for the exercise of the first.

Another argument used by Professor Macmurray is as follows. The Self as agent is causally effective upon its object and so " is part of the world in which it acts. . . . On the other hand, as subject the Self stands " over against " the world, which is its object . The Self as subject then is not part of the world it knows. . . . But to be part of the world is to exist, while to be excluded from the world is to be non-existent. It follows that the Self *exists* as agent but not as subject " (p. 91).

This seems clearly fallacious. It follows that the Self as subject cannot know of its own existence, but it does not follow that the Self as subject does not exist. The subject " is not part of *the* world *that it knows* ". Does it follow that the subject is not " part of the world " (i.e. of *everything* that there is) ? Only if it can be shown that " the world " includes no more than " the world that the subject knows ". Professor Macmurray has said (p. 90) that " the world in which the Self, as agent, acts, is the same world which, as subject, it knows ". Allowing this, we are not required to allow that " the world ", in which the agent acts, includes *no more* than " the world which the subject knows ". There is much of the world as a whole (the world of which the Self as agent is part) which the Self as subject does not know. So the fact that the subject is not part of " the world it knows " (i.e. of that *section* of the world as a whole which it knows) does not imply that it is not part of the world as a whole, i.e. that it does not exist.

It may be replied that by ' the world that the subject knows ' Professor Macmurray means all that the subject logically *could* know, and although this is co-extensive with the world as a whole, it cannot include the subject because, to know anything, the subject must stand " over against " its object. But this world of possible knowledge will exclude the Self as agent no less than the Self as subject. Professor Macmurray holds, following Kant, that we cannot know what is not determinate, and he would say that the Self as agent is not fully determinate. (In so far as the Self as agent is determinate, *sc.* in *having* done what it has done in the past, it can be known. But equally the Self as *past* subject can be an object of knowledge to the Self as present subject.) Yet Professor Macmurray would not infer from this that the Self as agent does not exist.

A little later (p. 96), Professor Macmurray gives arguments for denying that either mathematical or dialectical logic is adequate to express formally the relationships that hold of personal life. The problem of representing the logical form of the personal is one of representing the unity of the Self that combines both " positive " and " negative " aspects. The mathematical form cannot do this, since in it the positive and the negative exclude each other. Therefore it has to represent the agent-self and the subject-self as two, body and mind. The dialectical form, which claims to unify positive

and negative in a synthesis, seems in better case. But it requires that the positive and the negative (thesis and antithesis) should be successive, and therefore it cannot represent the Self as both agent and subject at the same time. Yet an adequate formulation must do this, since when we act we know that we act and act with thought.

I hold no brief for dialectical logic, and so shall confine my comments to Professor Macmurray's criticism of the " mathematical form ". It turns upon his use of the terms ' positive ' and ' negative '. There is nothing to prevent the " mathematical form " from representing the fact that thought is included in action, as 1 is included in 3, yet is *not* action, as 1 is *not* 3, in that it is not the whole of that which includes it. But of course Professor Macmurray means more than this in calling thought the " negative " of action. One thing he means by the dichotomy of ' positive ' and ' negative ' is the distinction between conflicting tendencies. Now the mathematical form can be used to represent a whole made up of two conflicting forces, e.g. the orbital motion of a sputnik. I am not implying that human behaviour is in fact analogous to the effect of mechanical forces ; that is a different issue. Professor Macmurray is claiming here that the mathematical form cannot represent *any* whole as made up of contrary tendencies. In the mathematical form, he says, " the unity of a positive and its negative is unthinkable. The sum of $+a$ and $-a$ is always zero " (p. 96). This implies that the dichotomy of positive and negative, if applied to conflicting tendencies, must be restricted to those in which exactly the same force is exercised in contrary directions, so that the result is a bare equilibrium, a zero effect. But no reason whatsoever has been given for so regarding the relation between action and thought or agent and subject. On the contrary, we are told that the natural tendency of thought, in its normal habitat of action, is to pass over into movement, while the contrary tendency is a matter of inhibiting the transition to movement. Thought is, as it were, a fraction of action, $\frac{1}{4}a$ let us say, and movement the remaining fraction $\frac{3}{4}a$. The inhibition of movement would be the negative fraction $-\frac{3}{4}a$, and we can form the equations $\frac{1}{4}a + \frac{3}{4}a = a$ (action), and $a - \frac{3}{4}a = \frac{1}{4}a$ (thought alone). Professor Macmurray's representation here of action and thought, or agent and subject, as ' $+a$ ' and ' $-a$ ' is no doubt influenced by his earlier arguments to the effect that the agent *exists* (and so is a ' $+a$ ') while the subject *does not exist* (and so is a ' $-a$ '), but I have already shown that his arguments for that conclusion are fallacious.

All this talk about " positive " and " negative ", and about a new " logical form ", seems to me unnecessarily mystifying and indeed confusing. Professor Macmurray does have a number of very important and enlightening things to say about psychology, but I think he simply obscures them by grouping together different kinds of relation under his rubric of positive and negative aspects. He writes on pp. 129-30 : " The experience " I do " is an expression of expending energy. In its positive mode, as " I act ", this expenditure of energy expresses itself positively in a bodily movement. In

its negative mode, as " I think ", the energy is still expended, but it is self-negated ; I myself provide a resistance to the tendency of cognition to " pass over " into action, which negates the tendency, so that the energy remains " potential ". That thinking also involves an expenditure of energy is shown by the fact that it can produce bodily fatigue ." This, with other remarks in the same vein, certainly gives us an interesting interpretation of the relation between action and thought, and it does involve a conception of contrary or conflicting tendencies—though, as he has described the matter, it is not the *thinking* which is " negative ", but " I " (presumably as agent, not as subject), who, when I am thinking, resist the normal tendency of thought to pass over into action. This notion of " positive " and " negative ", however, seems to have nothing to do with another use of the dichotomy, where the negative is said to be a " bare form ". Cf. p. 176 : " An ideal might be defined as a negative end ; as the bare form of an end. . . . Truth, for instance, might be defined as the completely adequate determination of the object. . . . This definition has . . . a negative relation to our present knowledge : that is to say it expresses a recognition of its inadequacy and so of our ignorance ." A different concept again is used when Professor Macmurray says (p. 115) : " Consciousness is the negative aspect of conscious behaviour ; *that is*, of a form of behaviour which necessitates consciousness as *a ground of its possibility* " (my italics). Here he is repeating the idea that the negative aspect is a necessary condition of the positive, but he seems now to be taking *this*, rather than any fact of *opposing tendency*, to be the defining characteristic of a negative aspect. Yet another concept of negation occurs on p. 173, where reflective abstraction is said to be " a negative " taking away " ; a taking away which in fact takes nothing away ". And on p. 193 we are told that to value something as a means and not as an end is to value it " negatively ", and since " intellectual knowledge is knowledge of the World-as-means ", it is " *therefore* the negative mode of reflection " (my italics).

Apart from the variety of threads that Professor Macmurray tries to weave into his material in order to obtain a single shot-silk effect, the cap which he manufactures from it is too big for the head it is intended to fit. We are told that personal consciousness includes organic consciousness " as its negative element " (p. 125), but also that " all consciousness " includes an unconscious as " a negative element within it " (p. 121). Now since the inclusion of a negative within a positive was said to be the identifying mark of the *personal*, it seems to follow that a merely organic consciousness, which includes an unconscious as its negative element, is personal. Yet here Professor Macmurray is contrasting organic with personal consciousness, adding to the latter the further criterion that it must be cognitive (p. 125). This alone shows that his abstract formula for expressing " the form of the personal " will not do.

In almost all the passages to which I have referred, Professor Macmurray is drawing our attention to neglected facts or enabling us to see things in

a new way ; and he does tie them up pretty well together in his survey from the standpoint of the agent. But his new " logical form ", with its " positive and negative aspects ", gives the impression of a neater parcel than he in fact provides. What is more regrettable, it is liable to put off readers at the present time, when anything smacking of Hegelian-type terminology is suspect. That would have to be borne, as an unfortunate result of prejudice, if the terminology were necessary or helpful. I have tried to show that it is neither. Yet it would be a great mistake to think that because of this the whole thing can be dismissed. In my opinion, Professor Macmurray's book is important despite its hankerings after a new logical form.

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BOOK REVIEWS

Mental Acts. By P. T. GEACH. (London : Routledge. 1957. Pp. x + 136. Price 12s 6d).

This book is one of the first of a series of works in the philosophy of psychology, designed to be of interest to both the philosopher and psychologist. Mr. Geach's aim is to establish, not the commonplace thesis that most of our talk about mental acts is metaphorical, but the more radical thesis that all our talk about mental acts is purely an analogical extension of our talk about sensible objects.

In the first part of the book Geach is concerned with thought and acts of judgment. ' Concepts ', according to Geach, are mental capacities, typically exercised in the intelligent use of words, and ' judgments ' are mental acts which occur, for example, when we make up our minds how to answer a question. Judgments are said to ' presuppose concepts ' and concepts to be ' exercised ' in judgments. Geach's chief enemy is Abstractionism, the doctrine that concepts are acquired by attending to some one feature of a situation and ignoring all the others. Russell, Price and contemporary psychologists are accused of being committed to this doctrine. As Geach rightly remarks, if psychological concepts were formed by abstraction, then we could acquire them independently of any analogy with concepts of sensible objects, and an analogy-theory would, therefore, be superfluous. To prepare the way for an analogy-theory of psychological concepts, Geach attempts to show that no concepts at all are formed by abstraction. He rightly rejects an abstractionist account of logical and arithmetical concepts, but then goes on to attack the abstractionist account of simple sensible concepts, like redness, where the abstractionist's case appears to be strongest. Even if, Geach argues, one did get to know how to use the word ' red ' by attending to red patches, this would no more be a case of *learning* than would getting to know Latin by means of a brain operation. Geach, however, gives no reasons for denying the name of ' learning ' to concept-formation by abstraction. In any case, he argues, abstractionism is a confusion. It is impossible, he says, to form the concept of chromatic colour by abstraction. For if I have a sensation of red, I cannot ignore the redness and concentrate on the chromatic colour, for the one cannot be isolated from the other. I do not have two sensations, " one of redness and one barely of chromatic colour " ; I have only one. Since the concepts of redness and of chromatic colour are " on the same footing ", he concludes that neither redness nor any other sensible concept can be acquired by abstraction, and hence that no concepts at all can be so acquired. But Geach and his predecessors have only refuted a naïve logical abstractionism, to which psychologists, by their talk about ' discriminative reactions ', do not commit themselves, as Geach implies. We cannot, it is true, prise off chromatic colour from, say, the redness of a patch, but we can be said to ' ignore ' the redness, in some sense of the word ' ignore ', by reacting to the patch *qua* chromatically coloured only. Geach's criticism of some contemporary psychology is thus based on a misunderstanding and one of the main arguments of the book collapses. According to his own theory of concepts, the mind " *makes* concepts " which may be applied to our sense-experience. " In all cases it is a matter of fitting a concept to my experience, not of picking out the feature I am interested in ." It would have been a great help to the reader if Geach had expanded his positive account of concepts by providing at least one example of how the mind " makes concepts " and thereby given some indication of the connection of his theory with psychological observation.

Geach goes on to criticise Russell's theory of judgment and to revise it. According to his own analysis, whenever I judge, for example, that every knife is sharper than every spoon, my judgment has two constituents, " Ideas ", as he calls them, that is, " exercises of concepts ". These two constituents are related by a relation different from the relation of *being sharper than*, but always relating the Ideas *every knife* and *every spoon*, whenever anyone judges that every knife is sharper than every spoon. But in making this judgment, one is surely exercising the concept *being sharper than*, and since " Ideas " are defined as " exercises of concepts ", it is difficult to see why the Idea *being sharper than* should not be admitted as a constituent. Geach's theory may be " formally admissible ", as he claims, but he gives no reasons for preferring his theory to others that are equally " formally admissible ".

Geach now gives an interpretation of his theory of judgment. We employ *oratio recta* primarily to report talk, and its use to report thought is, according to Geach, an extension of its primary use. My Idea, *every spoon*, consists in my non-verbally saying-something-in-my-heart to the same effect as ' every spoon '. But the analogy between speech and judgment breaks down, Geach argues, as regards temporal duration. Unless the Ideas are simultaneously present and " grasped together ", " the judgment just does not exist at all " (p. 104) ; words succeed one another in a sentence, but Ideas in thought do not. But, it may be objected, if (1) concepts are " exercised linguistically " (p. 13), (2) to use a word intelligently is to exercise the corresponding concept, (3) the use of one word succeeds that of another in a sentence, and (4) Ideas are " exercises of concepts ", then it follows that Ideas too succeed one another in thought. Geach seems involved in a contradiction, and this because his thesis clashes with what he himself, in common with everybody else, finds it natural and reasonable to say, namely, that concepts are " exercised linguistically ". This is further revealed in what follows. Geach considers the case of an unrehearsed expression of a judgment. Either the act of judgment occurs at one instant before, during or after the utterance, or it is constantly reiterated, or it goes on all the time. All these alternatives are rejected on the ground that they lead us into a " bog of nonsense ". Thus if, he argues, the judgment takes place at a particular instant, then the rest of the time is " taken up with uttering parrotwise " (p. 106), which, he implies, is absurd. On the other hand, it seems greater nonsense to say that somebody had a sudden thought, which went on all the time he was speaking. Geach does not examine how he got into the ' bog ' in the first place, but produces an extravagant theory to save the appearances, the theory that judgments are only " loosely tied " to physical time. But the ' bog of nonsense ' is of Geach's own making and is a consequence of an assumption which he never explicitly states, the assumption that every outward, intelligent utterance in the indicative is inevitably shadowed by an inward act of judgment. This assumption is the door through which the Ghost creeps. It is one thing to argue that acts of judgment occur and are sometimes made before being expressed in words ; it is quite another to assume that the utterance is never the vehicle but always the expression of the judgment. But, even if we accept Geach's assumption, we are not *compelled* to slither into his ' bog '. For example, my utterance is not ' parrotwise ', unless I speak without understanding what I am saying. It is far from obvious that my ' act of judgment ' and the understanding of what I am saying are the same thing (consider a case of insincerity) and, therefore, it does not follow that, if the judgment occurs at only one instant of the utterance, then the rest of the time is taken up with ' uttering parrotwise '.

The second part of the book is devoted to the consideration of psychological concepts other than judging, namely, pain, emotion and perception. The abstractionist account of these " sensuous " concepts is bound up, according to Geach, with the doctrine of an Inner Sense, against which he delivers a good Rylean attack, pointing to the absence of introspective imagery and of any kind of " emotion-blindness ". But abstractionism does not need any full-blooded Inner Sense, but only the power to react discriminatively to one's own reactions. Geach's own theory is hardly lucid. In order to judge about a particular pain my judgment must stand in what Geach, borrowing an expression from Aquinas, calls the " conversio-ad-phantasmata " relation to the pain itself. Geach rightly emphasizes that ' sensuous ' concepts (he hesitates to include all psychological concepts) can have no meaningful application apart from a living organism, and gives an interesting treatment of the ' Cogito ' in this connection. In a last chapter he points out that, when we describe how things look (" describe our sensations "), we are applying concepts primarily used to describe physical objects. Whether this is a necessary truth or is just a generalization about our language is not discussed.

This is a stimulating book, containing amongst other things many interesting remarks germane to the philosophy of logic. It may not be of much assistance to the experimental psychologist, but Geach's analogy-theory of psychological concepts is exciting and thought-provoking for the philosopher of mind.

NEIL COOPER

The Logical Problem of Induction. (Second Revised Edition). By G. H. VON WRIGHT. (Oxford : Blackwell. 1957. Pp. xii + 249. Price 25s).

The first edition of this work has long been an established textbook in the philosophy of Induction, and its republication will be welcomed by all teachers of Philosophy. From this point of view it is unfortunate that no translations have been added for the quotations in German and other languages which, though perhaps not essential to the argument, are numerous enough to discourage a student not linguistically equipped.

In other respects this edition is no mere reprint. There are a large number of corrections and some relatively minor changes, of which the most important are the rewriting of the section on the mechanism of elimination (Cap IV, §4) to conform with Caps III & IV of the author's *Treatise on Induction & Probability*, an improved treatment of Reichenbach's Method of Correction (Cap VIII, §2), and a section on the increasingly fashionable approach to the justification of induction in terms of comparisons between inductive and non-inductive policies. In addition Cap VI on the formal analysis of Inductive Probability has been replaced with quite new matter.

The treatment of the law of great numbers and inverse probability in this part is very clear, and corrects some widespread misunderstanding about the inversion of Bernouilli's theorem and Laplace's Rule of Succession, showing that under certain stringently defined conditions these arguments are valid. This chapter also contains interesting material on the confirmation of generalisations by true instances. An extremely simple proof, independent of the Inversion Theorem, is given for the proposition that if the initial probability of a generalisation is not 0, its *a posteriori* probability is increased with each new confirmation whose probability relative to previous confirmatory evidence is not 1, and a plausible axiom suggested which, if added to the postulates of probability theory, would confirm Keynes' view that the degree of confirmation provided by an indefinitely long series of confirmatory observations approaches 1. This axiom is to the effect that if a sequence of singular propositions approaches a given general proposition as a limit, then the probabilities of the propositions of the sequence approach as a limit the probability of the general proposition. There seems to be some obscurity here in the notion of a series of propositions approaching a proposition as a limit. This notion clearly rests on the analogies between a conjunction of singular propositions and a general proposition. Whether this would justify the use of the concept of a limit in this connection depends on the nature of the particular formal system chosen as the context of the notion.

Here as elsewhere Professor Von Wright seems to over-estimate what can be achieved by treatment of philosophical problems in terms of abstract formal models. His treatment owes some of its clarity and orderliness to the use of such formalisations, but there are dangers in discussing such problems in terms of the properties of abstract entities such as ' propositions '. In the treatment of confirmation, for instance, the confirmation of a generalisation by a positive instance is regarded as a probability relation between two propositions, but in dealing with the paradoxes of confirmation Professor Von Wright says " Whether the fact that a thing which is both A and B is a genuine or a paradoxical confirmation of the law that all A are B depends on *the way in which this fact becomes known to us* " (his italics). It is over-hasty to assume without question, as Professor Von Wright appears to do, that such a dependence can be represented by the assessment of probabilities relatively to different bodies of background evidence, regarded as different sets of ' propositions '. The notion of a system of relations between propositions is an abstraction from a concrete linguistic policy for dealing with concrete situations ; and the philosophically interesting problems in logic centre on the interpretation of such formal systems in terms of such concrete policies, particularly where, as in induction, the policies shift with the accumulation of evidence.

Such over-readiness to assume that the rational structure of our reasoning processes can be represented in formal logical systems causes Professor Von Wright to be rather unfair to such writers as J. O. Wisdom. Though he is quite right in accusing Wisdom of exaggeration, it seems to me that he has not seen the point of Wisdom's denial that induction is an ' inference '. The point of this denial is that to treat induction as an inference is to admit as applicable to it canons of validity which cannot be applied without leading to an impasse. Scientific conclusions are not inferred from observational premisses in the same sense that logical or mathematical conclusions are inferred from their premisses, but are answers to questions arising from hypotheses. The nature of this activity of question and answer is not to be understood by assimilating it to a formal system in which a conclusion is implied by premisses, but by reference to the nature of the activity and its role in our concrete situation. Wisdom's point, with which I suppose Professor Von Wright would be in general agreement, is that we could not meet a demand for a justification of the validity of induction as an inference. An alternative description of induction as a particular case of the hypothetico-deductive policy removes some of the motivation for making this demand.

Nevertheless a formal analysis of the patterns of inductive and statistical inference such as Professor Von Wright makes does reveal the articulation of systematic inductive reasoning. For a detailed commentary on Professor Von Wright's achievements in this direction one cannot do better than refer to Professor Broad's series of articles in *Mind* from January to July 1944.

G. C. J. MIDGLEY

Logic Without Metaphysics, and Other Essays in the Philosophy of Science. By ERNEST NAGEL. (Glencoe, Illinois : Free Press. 1957. Pp. xviii + 433. Price $6.00).

Professor Nagel's earlier volume of collected essays (*Sovereign Reason*, 1954) consisted almost entirely of critical studies of contemporary philosophers who have been occupied, in one way or another, with the content or method of modern science. The larger part of the present volume consists of nine studies in what may broadly be called the philosophy of science, a lengthy survey of analytic philosophy in Europe in the mid-1930's, and twenty book-reviews, generally concerned with problems in or about the philosophy of science, which were published originally in various journals, proceedings and volumes of collective authorship in the United States between 1934 and 1955. All these writings exhibit the acuteness of insight, the informed and judicious comment, and the clarity of style, that one has learnt to expect from Professor Nagel. Even the book-reviews contain much that is of permanent value. Those who would like to be told, for instance, just where the flaw is to be found in Donald Williams' attempt to provide an *a priori* justification for inductive inference, could not do better than read Professor Nagel's review of Williams' *The Ground of Induction*. Philosophers of a younger generation will also be grateful to Professor Nagel for reprinting his survey of the analytic philosophy professed at Cambridge, Vienna, Prague, Warsaw and Lwów on the eve of the various catastrophes which broke up or dispersed the analytic schools in four of these centres. It is particularly interesting to learn something of the background philosophy—the 'nominalistic naturalism' which Professor Nagel suggests was part of the orthodoxy in most Polish universities—that lay behind much of the now well-known Polish achievements in logic and the foundations of mathematics.

Too many points are raised in Professor Nagel's papers on the philosophy of science for any detailed summary or comment here. But perhaps some are worth special mention. One paper entitled "A formalisation of functionalism with special reference to its application in the social sciences", is an attempt to analyse, with the aid of appropriate symbolism, those functional explanations that occur in biology, with a view to clarifying the requirements that functional explanations must satisfy if they are to have a useful role in sociology. This is a useful contribution in a field where rough analogies are too often a substitute for rigorous argument. Professor Nagel also has some especially illuminating things to say about the use of logic and mathematics in the natural sciences. For instance, no measurement can ever establish a distance to be $\sqrt{2}$ feet, since every measurement we make yields a rational number, never an irrational one. What significance then can be attached to the use of irrational numbers in physics? Professor Nagel is not content to say that the answer to this question lies in studying the whole context of theory in which these numerical expressions are used, but goes on to give the results of such a study (pp. 87-92).

In some of the opening and concluding papers Professor Nagel is at pains to defend scientific method, and the analytic approach to its philosophy, against the attacks of those who oppose, in some fields or in all, this whole intellectual tradition of critical enquiry and seem to support instead some brand of irrationalism or obscurantism. He delivers a series of weighty blows against a wide range of opponents—Gilson and Maritain, Aldous Huxley and F. A. Hayek, J. B. S. Haldane and Maurice Cornforth. But in one respect at least he seems to overstate his case. In defending his conception of scientific method as the proper way to extend human knowledge in any field he does not need to claim that moral statements are also always experimental or empirical in character (e.g. pp. 11, 241). And if he does wish to make this claim he ought to try and support it by making as detailed a scrutiny of certain moral concepts and moral statements as he makes of the rôles performed by, say, functional explanations or irrational numbers in natural science. At the very least he should say how he would meet the stock rejoinder that what he says applies to statements about the means to accepted ends, but not to statements about the ends we ought to accept, for it is only in coming to grips with this objection that an experimentalist philosophy of morals becomes interesting.

L. JONATHAN COHEN

General Principles of Law. By GIORGIO DEL VECCHIO; translated by FELIX FORTE. (Boston : Boston University Press. 1956. Pp. ix + 111. Price $3.50).

Del Vecchio (born 1878) is a legal philosopher who, by the breadth of his learning and the clarity of his writing, has acquired great popularity and influence on the continent and has inspired a numerous school of followers in Italy. A good deal of his voluminous work has been translated into English. The present essay belongs to the pre-Fascist period (1920-1) and deals in substance with a problem in the interpretation

of the then Italian civil code, which directed the judge, in the absence of a positive text and when analogy fails, to fill in the lacunae in the law by recourse to the " general principles of law ". Del Vecchio rejects the idea that this refers to the general principles of *Italian* law and, under the influence partly of Kant and partly of the modern natural law school, expounds the character and content of these universal or nearly universal principles. The principles turn out, not surprisingly, to have a liberal, democratic slant : the maxim of equal liberty, the limitation of personal rights only by the general will, the sovereignty of law, the separation of powers and equality before the law.

The status of the general principles of a legal system or of civilised law as a whole certainly calls for elucidation, but it is doubtful if del Vecchio's approach is the most illuminating. He, along with many natural lawyers, argues that if the basic principles of law are not arbitrary they must be " necessary ". But the necessary element is either interpreted so formally as to be consistent with almost any actual system (and this is the usual criticism of del Vecchio's philosophy), or turns out to be at variance with positive law. The author says " The true nature of man implies autonomy. The law can neither ignore this ' fact ' nor refuse to carry out its consequent and logical applications ". Yet various legal systems have emphatically done this during del Vecchio's own lifetime. The lofty notions which inspire the book would, one feels, be better characterised as moral or political principles, though to say this is perhaps merely to reflect the perennial image of the British mind.

On the other hand many will sympathise with del Vecchio's thesis so far as it amounts to a plea for a liberal interpretation of codes and statutes in the light of the fundamental principles of the system, which are, in truth, neither " arbitrary " nor " necessary " nor " positive ", if by that is meant strictly deducible from statutes and decisions. They are conceived of as underlying rules of law but not exhaustively illustrated by them and they change, gradually, in a way which is not a mere aping of political fashion. Whether one speaks of the " general principles of law " or, as the revised Italian code has it, the " general principles of the legal order of the State " or the " general principles of common law and equity ", one touches on a notion which still stands in need of an analysis free from preconceptions. This book, crisply translated by Judge Forte, provides a thoughtful introduction to the problem.

A. M. HONORÉ

The Language of Value. Edited by RAY LEPLEY. (New York : Columbia University Press. London : O.U.P. 1957. Pp. viii + 428. Price 52s).

This volume is a sequel to *Value : a Cooperative Enquiry* (New York 1949). Like the earlier work, it consists of a number of essays by different contributors, followed by short critical replies, one reply per essay, and a ' response ' by each author to his critic. Two chapters of ' comments ' on the essays as a whole complete the volume.

The essays themselves are widely contrasted in subject-matter and analytical technique ; and they vary in the degree of their informality or aspiration towards the formal and systematic. For several reasons (some respectable, some not) the British reader is likely to find this a taxing, sometimes exasperating set of studies, although here and there a most rewarding one. The contributors are familiar with the detail of one another's published works, with the terminology of current American linguistic research : and (despite brief clarifications) the reader is expected to be equally at home with them too. With one or two merciful exceptions, the style of the essays is ponderous and jargon-laden. There is not a contributor here who can write with the clarity and crispness of A. J. Ayer or combine analytical rigour with readability like a Nowell-Smith or Hare.

Some of the essays attempt bold analyses of the language of value. According to Willis Moore, for instance, a moral situation is one in which an " individual is being persuaded through his desire to live in accord with the desires and expectations of others, perhaps as summarized in a moral code . . ." (p. 20). A little more plausibly, Ian McGreal suggests that ' X is good ' usually means " that X is such that if . . . A were to have knowledge of, or about, . . . X, he would favor it . . ." (p. 117). To A. Campbell Garnett, " ' X is good ' is equivalent to ' X is a reasonable object of a favorable attitude ' " (p. 122).

There are disputes also on the epistemology of value judgment ; one of the liveliest and best-written pieces being the exchange between Richard Brandt and Charles L. Stevenson on ' cognitive ' versus ' attitude ' analyses. I suspect that this may be one of those disputes in which the theoretical disagreements are intertwined with differences in the ' first order ' moral experiences of the disputants. It is this interaction between philosophical interpretation and the ' data ' of moral awareness, their buttress-

ing of one another, that makes a rapprochement between such rival theories exceptionally difficult to achieve.

Charles Morris contributes a stimulating discussion of the relation between 'liking' something (say, a painting) and 'appraising' it as a work of art. Sharing the ambition of many of his fellow-contributors to make value-analysis in some sense scientific, Morris anchors his conclusions to experimental data culled from a student group. His critic, McGreal, makes some shrewd comments on the experimental findings and on Morris's use of them. The scientific ideal is very evident in Stephen C. Pepper's essay "Evaluation and Discourse". "Evaluation", he says, "appears to be a scientific type of procedure subject to all the usual criteria of inductive inference and observational control" (p. 92). In his reply to this essay L. J. Lafleur points out reasonably enough that while such procedures are very much in order in working out effective means to selected ends, they cease to be helpful where we are selecting our ultimate goals themselves (p. 283). Pepper's rejoinder to this (p. 286), though suggestive, is too brief to be adequate.

Again, E. Maynard Adams argues that "value sentences" . . . are "factual, empirifically verifiable, and proper subjects of factual truth-value predicates" (pp. 104 f.). "The fundamental distinction between technological and ethical justification is that the former is in relation to some specific, limited interest or end, whereas the latter is in relation to all relevant interests or goals" (p. 104). "Ethical interest" has as its object, "the maximum net satisfaction of all relevant interests" (p. 103). Herbert Feigl is surely right in his reply to point out that the ambiguity both of "satisfaction" and of "relevant" takes away the usefulness of such a blanket-account of ethical value. Feigl reaffirms the distinction—so often and so strangely lost from sight in this volume—between language that describes and language that carries "the stamp of approval, the accent of endorsement, the force of encouragement" (p. 294). The fact-value dichotomy, the fork between descriptive and emotive, has seemed to many philosophers to involve the relegation of value-language to a non-informative, non-verifiable hinterland, where they are reluctant to see it remain. But attempts to reintegrate it with scientific language (as in certain of these essays), to offer "non-normative" definitions of 'good', to dismantle the road-blocks between the territories of 'is' and 'ought', seem chronically to forget just that feature of moral judgment which is emphasised by Feigl in that passage (and by many contemporary British moralists)—that no matter how *relevant* psychology, anthropology and social studies may be to moral cogitation, no factual researches can *entail* or *necessitate* an ultimate moral stand.

Analytic conclusions apart, this anthology presents a great deal of food for thought on *methodology*. How close ought the philosopher to remain to everyday language, everyday imprecision, everyday informality? Certain contributors are most hospitable to ordinary use and to analysis which functions at a fairly low level of generality. Others, like Robert Hartman, are formal system-builders and critics of ordinary-language philosophy. "In the sciences", says Hartman, "the most fruitful systems were those which most strikingly contradicted common sense, such as Copernicus's and Einstein's. The same may be true in value theory" (p. 362). The reader has a choice: he can remain close to the everyday employment of value-expressions. (And this, after all, is the use into which we are seeking to gain new insight.) He will pay the price of a sometimes scrappy and piecemeal, unsystematic analysis. Or he can have his system—at another (and I suspect, greater) price: for his difficulty now is to know how to *use* his system, with its complexity and abstractness, to shed light on those original puzzlements that initiated his study of value-language. He sees those now, if at all, through a screen of jargon, very darkly.

Finally, the following are the contributors to *The Language of Value* whose essays I have not discussed above: E. S. Robinson, H. Fingarette, H. N. Lee, and the editor, Ray Lepley.

R. W. Hepburn

Mystery and Philosophy. By M. B. Foster. (London: S.C.M. Press. 1957. Pp. 96. Price 12s 6d).

Mr. Foster's book represents the Gunning Victoria Jubilee Lectures, substantially as they were delivered in Edinburgh in 1955.

The source of the author's use of the term "mystery", which occurs in all six chapters of the book, is in M. Gabriel Marcel's well-known distinction between a "problem" and a "mystery", of which he gives an account on pp. 18 f. of his book. But he is also indebted to an unpublished paper by Dr. E. L. Mascall, in which the latter employs the notion of a "puzzle" as that of a third sort of "impasse" (that word is my own);

whereas a problem may be resolved, e.g. by a development in the field of mathematics, by improved methods of miscroscopy, or by advance in experimental technique, a puzzle is solved by " clarification of what we know already " (p. 19). Analytic philosophers, of whose views Mr. Foster gives an account in his first lecture, tried to convert all " mysteries " into " puzzles ". He quotes on p. 21 a lengthy passage from Schlick's paper on " Meaning and Verification " and insists that the concluding sentence of his quotation, " there is no unfathomable mystery in the world ", is one which is in practice accepted by British analytic philosophers of the style of e.g. Professor Moore as well as by the members of the *Wiener Kreis*.

In the concluding section of this first chapter, Mr. Foster emphasises what he has already indicated in his quotation from Marcel, that he is not concerned to rehabilitate ontological metaphysics, but that rather he is concerned with matters of revelation, where men have to do with that which is not in any sense an answer to questions of any sort whatsoever which they have put to themselves. His main example of a " mystery " here is the unity of the Church as expounded by Professor Leonard Hodgson at the Lund Conference on Faith and Order in 1952. But it is clear that, although he prefers to find " mystery " in his sense here than e.g. in the fact that the world exists, he is at one with the ontological metaphysicians in a concern that what is said concerning the " mysterious " shall not simply somehow be rendered intelligible, but shall also be true in the sense of according with what is (cf. p. 15, footnote).

This introductory chapter is followed by a series of discussions, sometimes too brief to be immediately satisfactory, of such topics as mystery and Greek philosophy, mystery in the Bible, science and mystery, ethics and mystery, etc. Yet if some of the discussions, e.g. on mystery in Greek philosophy, are too short, the author resumes in other places the issues he has raised in the chapter devoted explicitly to them. Thus we understand better what he is saying concerning the views of contemplation and its relation to knowledge which he finds in Plato and Aristotle, when we have followed to the end his treatment of the aims and methods of modern science and perceived his insistence that the " subjection of nature to man is also proclaimed in the Bible (Gen. 1, Ps. 8) " (p. 56 ; cf. pp. 54 f. and p. 42) ; while if after this we judge Mr. Foster unfairly hostile to a bogey-man called " Hellenism ", we have the long suggestive footnote on p. 92 as a final corrective. At once the difficulty and the value of Mr. Foster's book resides in this subtle and complex method of exposition, whereby a relatively balanced treatment of e.g. the relations of faith and knowledge is achieved by a continual taking-up again in new settings of topics briefly touched on sometimes only by well chosen quotation.

The first chapter is certainly the key to the whole book, and it would seem to be Mr. Foster's view that it is only in a context from which mystery, in the ways in which one may most readily conceive it, has been ruthlessly extruded, that the true "mystery" of revelation is manifested. Thus he sometimes seems to treat the methods of such philosophers as Schlick and Reichenbach as worth pressing *à l'outrance* in order to invalidate the claims of any spurious claimant to the throne of the " mysterious ". That only is truly mysterious which shows itself as something that it is altogether irrelevant, if not blasphemous, to put to the test (cf. the passage on p. 61, in which Mr. Foster expresses a debt to Professor David Cairns). But if we are to reach towards the genuinely mysterious we can only do so when we have made the utmost effort to be sure that we have not somehow domesticated it, after the manner of the man who found the Kingdom of God here or there (p. 71). It is not that Mr. Foster is developing a ' negative theology ' in which God becomes the name of the sheerly unknowable, where knowledge is understood as it is understood e.g. in Schlick's *Allgemeine Erkenntnislehre*. It is rather that the religious believer, on Mr. Foster's view, can convert to his own use as an instrument of theological discipline, philosophical positions and attitudes fundamentally inimical to metaphysical speculation.

It is, then, as a bold essay in the enterprise of ' faith seeking understanding ' that Mr. Foster's difficult, but very interesting, book is to be approached. The central note is again struck in the chapter on ethics and mystery where he seems almost impatient with the criticisms of utilitarianism to be discovered e.g. in Butler, or Kant ; it is as if utilitarian doctrine, illustrated from the writings of Professor Barbara Wootton and Goldsworthy Lowes Dickinson as well as from those of Mill (pp. 79 ff.), provides him with the very paradigm of that humanist conception of morality and moral rules, which must be " broken in upon " (to use metaphorical language) by the authority of revealed " mystery ".

Mr. Foster's book seems to demand serious criticism at three points.

(1) His narrowly theological use of the concept of ' mystery ' demands of him a far fuller, less elusive and allusive treatment of revelation than he offers ; and as he writes as a Christian, this might be specified in terms of a definite attack on the problems of Christology.

(2) Although he commands a very wide philosophical culture, at times (and this is true of his treatment e.g. of Plato, and of Kant), he wants too much, as it were, to clear the arena for battle between e.g. humanism and Christianity. Thus he ignores the extreme internal complexity which marks the philosophical work of men like Plato, Kant and Mill, and in his clearly-drawn conception of scientific method he does less than justice to the rôle of mathematics therein, and e.g. to the curiously ambivalent relations between the theoretical physicist and the pure mathematician.

(3) If faith must seek understanding, we cannot deny *a priori* that understanding may seek, even issue in, faith. Mr. Foster must surely recognise that in such great modern philosophers as Kant and Mill, we find 'mystery' (in Marcel's sense), acknowledged perhaps in the case of the latter, in spite of himself. For Kant, moral freedom was surely a 'mystery'; for Mill, that freedom of which he wrote in his *Essay on Liberty* was also a mystery (cf. also here the treatment of freedom in Professor Isaiah Berlin's *Historical Inevitability*). These 'freedoms' are not examples of a theological 'mysterious' (after Mr. Foster's pattern); but they are ideas whose admission may compel a philosopher to revise a conception of the way things are to make room for their reality, or even to subordinate cherished goals of theoretical comprehension in order to establish their pre-eminent dignity. One could even say that for Mill, 'freedom' (as he saw it in the creativity of the man of genius) was a point of departure for a sort of metaphysics; whereas for Kant 'freedom' was the name of that 'mystery' which revealed the relative worthlessness of metaphysics. It is certainly a weakness of Mr. Foster's very valuable and deeply suggestive book that he does not seriously discuss the relations between 'mystery' understood theologically as he understands it, and 'mystery' as something which intrudes itself upon the philosopher of empiricist temper, compelling him to inconsistency, revision, re-orientation, what you will. The problems of the relation between Christianity and metaphysics are not, unfortunately, dissolved simply by the acceptance of the discipline of an anti-metaphysical philosophy; other questions remain, and we may look forward to reading Mr. Foster's views on them in some future work.

D. M. MACKINNON

Observation and Interpretation. Edited by S. KÖRNER. (London: Butterworth. 1957. Pp. xiv + 218. Price 40s).

This fascinating volume is the record of a symposium of philosophers and physicists held at Bristol in April 1957 under the auspices of the Colston Research Society. Those who were present reported that it had been an exhausting but exhilarating occasion, at which an unusual degree of understanding had been achieved between the participants. Much of the excitement and fire of the discussion comes through in the printed record. Our normal media of publication do little to capture the vigour of active intellectual debate in the way in which the exchanges of letters characteristic of earlier generations of philosophers used to do. There is about this volume something of the drama which a good correspondence can preserve, enhanced if anything by judicious use of the tape-recorder.

The subjects of the symposium all revolve round one central theme. This appears at first sight rather a technical one, but on investigation reveals itself as a basic issue in natural philosophy. For some years theoretical physicists working at the highest levels of theoretical speculation have been divided into two camps disagreeing with each other—sometimes bitterly—about the adequacy of quantum mechanics in its orthodox formulation. The disagreement may have been in part a very technical one, but it has not been concerned with mere technicalities. Fundamental questions about causality, probability, the aim of scientific enquiry, and the nature of theoretical concepts; these have all been inextricably bound up in the argument. In the Bristol symposium theoretical physicists from the opposing camps were brought together in order to explore and formulate explicitly—if not to iron out—their differences of view, and the presence among them of critically-minded philosophers does seem in the event to have helped them very largely to achieve what they set out to do. It cannot be said that they ended by agreeing, for their disagreement turned out to involve the whole question of the direction in which physical theory will most profitably develop, and this must be judged in the future. But the nature and grounds of their disagreement became much clearer in the course of the argument, as dogmatic initial assertions were replaced by more temperate and judicious opinions.

Philosophers will read with interest and complete comprehension the papers by Braithwaite, Ayer and Popper on probability, and those by Körner, Polanyi, Kneale, Gallie and Ryle on other related topics. But they should for their own good make a gallant effort to grasp the chief arguments (if not the mathematical parts) of the papers

by Bohm, Rosenfeld and others on the quantum-theory dispute. The discussions of these papers are also very stimulating. As a preparation for this effort, they may find the concluding paper by Sir Charles Darwin about the background of the problem of interest.

One sometimes finds it difficult to say how reasoning over matters of high theory in science can be assessed in logical terms. On this question the present volume throws great light. There is general agreement among the physicists with Professor Körner's contention that theorisers in physics have in mind certain very general regulative principles about the manner in which satisfactory theories are to be built up. But in practice, as these discussions show, there is an almost continuous appeal (either explicitly or by implication) to the practice and experience of earlier theorisers. The extent to which the legitimacy of any type of speculation is justified by appeal to respectable precedents reminds one of the law-courts. Perhaps the truth is that the development of theories in natural philosophy has to be criticised in terms of a system of case-law rather than by appeal to any formal logical principles.

STEPHEN TOULMIN

Progress in the Age of Reason. By R. V. SAMPSON. (London : Heinemann. 1957. Pp. iv + 259. Price 21s).

The author surveys ideas and beliefs about progress held by European thinkers from Bacon to Marx and relates them to their theoretical and historical context. He gives a clear and well-arranged account of these developments ; and his book constitutes a useful work of reference on the topic. It does not, however, replace J. B. Bury's *The Idea of Progress*, for the two books are complementary to one another in some respects. Dr. Sampson does not include many nineteenth century thinkers in his field of study. He has only a passing reference or two to Huxley and Spencer, for instance, and none at all to the anti-progress literature of men like Chateaubriand and de Maistre. But he does pay a good deal of attention to Marx, while Bury, whose book was published in 1920, scarcely mentions him. Dr. Sampson is also somewhat more philosophically self-conscious than Bury ; and in his final chapter he seeks to evaluate the concept of progress in relation to current problems of political thinking. But these concluding remarks are based on the assumption of a ' rational ethic ' which probably needs rather more space to defend than the few pages Dr. Sampson allows himself. And as the main purpose of the book is historical rather than philosophical my few criticisms on points of detail will be confined to the former aspect of it.

It is surprising to find the doctrine of Natural Law taken to embrace a " fundamental dualism of the *is* and the *ought* " (p. 147), while Hume's moral philosophy is construed as an attempt to close the gap between the *is* and the *ought* (p. 154). Hume's own well-known emphasis on the importance of recognising this gap (Treatise III, i, 1) makes such a view seem particularly paradoxical. Perhaps Dr. Sampson is not fully distinguishing from one another two quite different dualisms : the metaphysical dualism of reason and emotion as alternative determinants of human conduct and the logico-analytical dualism of fact-stating and value-judging as two distinct functions of human discourse. Hume's arguments against the former dualism relied to a considerable extent on his acceptance of the latter dualism, while the doctrine of Natural Law, at least in the shape in which Hume attacked it, was inclined to emphasise the former at the expense of the latter.

It is doubtful whether the relevant views of so prolific and many-sided a writer as Herder can be adequately summarised from just one of his works—his *Ideen zur Philosophie der Geschichte der Menscheit*. But even on the basis of that work alone, which is the only one Dr. Sampson examines, it seems hardly fair to Herder to say, as Dr. Sampson does, that Herder believed different races to have different innate qualities which control their capacity for cultural progress. It seems hardly fair to accuse Herder (p. 181) of not attempting to " conceal his belief in the natural inferiority of the Negro ". On Herder's view in his *Ideen*, colour of skin, though hereditary, was in general an index merely to physical environment, and it was primarily environment and cultural transmission that controlled what each people made of the common humanity they all shared. This view seems to me to be expressed again and again in books V to VIII (cf. T. Churchill's translation, 1800, pp. 163, 167, 185 f., 202 ff., 215, 236, 241, etc.).

Dr. Sampson does not make any mention of the late E. Zilsel's views on the aetiology of the concept of progress (cf. in particular ' The Genesis of the Concept of Scientific Progress '. *J. Hist. Ideas* vi, 1945, p. 325 ff.). Zilsel granted that Bacon was the first intellectual to base on this concept a scientific and philosophical programme. But he emphasised that the modern idea of gradual progress through successively accumu-

lated improvements presupposes a co-operative outlook, and he traced the ultimate origin of the idea therefore to the superior artisans of the fifteenth and sixteenth centuries. Whereas the medieval guilds stressed the continuity rather than the progress of craftsmanship, the publication at this period of many treatises by artists, instrument-makers, gunsmiths, barber-surgeons, etc., was expressly intended to further the development of their craft. This theory is perhaps of sufficient interest to deserve an airing even if only to be rejected.

Finally, is it quite right to attribute to Copernicus the view that there are ' innumerable planets revolving round the sun ' (p. 15) ?

L. JONATHAN COHEN

Modern Linguistics. By SIMEON POTTER. (London : André Deutsch. 1957. Pp. 192. Price 12s 6d).

There exist a number of excellent introductions to the study of modern linguistics, notably the three classical statements of the first half of the 20th century by Ferdinand de Saussure (*Cours de linguistique générale*, Paris 1916), Edward Sapir (*Language*, New York 1921), and Leonard Bloomfield (*Language*, New York 1933). These books are distinguished not only by the profound influence they have exerted on linguistic studies everywhere by virtue of their acumen and entirely fresh approach, but they are almost equally remarkable for their superb presentation and style. More recently, H. A. Gleeson has provided us with a good *Introduction to Descriptive Linguistics* (New York 1955), and the appearance of B. L. Whorf's posthumous *Language, Thought and Reality* (New York 1956) was an event of considerable importance.

These are all works of great significance to linguists and philosophers alike. Most of them were written on the other side of the Atlantic. There is still a disturbing dearth of linguistic work produced in this country. Of course, there are the important achievements of Daniel Jones or J. R. Firth and others, but it is odd to observe that Professor Potter's little book appears to be the first British work of general introduction,[1] albeit brief and by no means comprehensive, to current notions in linguistic studies. If it goes very little beyond its transatlantic predecessors, then this is much less due to any deficiencies on Professor Potter's part than to the excellence of those writings. The author is a level-headed and experienced guide, and his book steers a circumspect course between the extremes of the hidebound and out-moded philologist and the ephemeral conceptions of some algebraic linguists. Its moderate price should make it readily accessible to students who may now also benefit from two recent American paperback re-issues of Edward Sapir's *Language* and the same author's posthumous *Culture, Language and Personality*.

Professor Potter examines language under eight heads : (1) Speaking and Hearing (dealing principally with matters of phonetics) ; (2) Sound and Symbol (mainly concerned with the problem of the phoneme, the minimal sound-unit relevant to meaning, and with systems of writing) ; (3) " Dynamic Features " is the title of the chapter which discusses such prosodic elements as length, pitch, stress, tone, etc. ; (4) Words and their components (morphemes, words, flexion, etymology, etc.) ; (5) Sentence structure (word order and selected syntactical questions) ; (6) Linguistic Geography ; (7) Semantic value, meaning and sense ; (8) Discipline and Freedom.

That *Modern Linguistics* is a work of *haute vulgarisation* rather than an original statement (despite many valuable observations of detail) is readily acknowledged by Professor Potter in his preface. In the first six chapters he has " adhered fairly closely to accepted opinion ", while the last two chapters " offer more personal views ". Unhappily, these last two chapters fall rather below the standard set by the remainder of the book and abound in generalia or snippets which, though always agreeably presented, might with advantage have made room for a closer study of the problems of meaning. Thus the reader will miss, among others, any mention of Trier and his ' linguistic field ', a theory which even in its limited application is one of great pregnancy.

Professor Potter aims at presenting an introduction " so clear in its main outlines that any intelligent reader may understand it ". " Even the most abstruse principles of a living science are surely amenable to lucid exposition " (p. 7). I wonder ! My doubts are greatly confirmed by the author's definition of the phoneme on p. 39. What a cumbrous statement for one who prides himself on lucid exposition ! But the fault is not Professor Potter's : it is inherent in the complexity of the concept. The initiated will readily understand what Professor Potter wishes to convey ; yet the ' intelligent reader ' will be bewildered and perplexed (and I have tried it out on some who may be said to fall within this category).

[1]Books like Entwistle's *Aspects of Language* cannot be considered in this connexion, for they are personal and rather capricious statements.

Is it really true to assert (p. 18) that " the human ear can distinguish far fewer sounds than the speech organs can produce " ? Is it not rather that the human ear is phonemically attuned and will pick out only such sounds as are distinctive and relevant ?

It may be hoped that Professor Potter's rehearsal of the well-known facts as regards onomatopoeia (p. 37) may finally dispose of the widely held view that onomatopoeic formations are more than conventional approximations : English *bow-bow* for the dog's bark compared with French *gnaf-gnaf* (as well as many other instances) should have done so long ago.

The development of writing and the evolution of the alphabet are not, of course, strictly germane to Professor Potter's theme. It is patent that this subject is somewhat outside the author's professional sphere. There are a number of statements which, while not outright inaccurate, had better be put differently. The same applies to some observations (*passim*) on certain Oriental languages.

In his valuable discussion of universal grammatical categories Professor Potter would have found two of R. H. Robins' writings useful : *Ancient and Mediaeval Grammatical Theory in Europe* and *Noun and Verb in Universal Grammar* (*Language* 1952). The reviewer emphatically concurs with the author's judgment that present-day linguists ought to be acquainted with at least one Non-Indo-European tongue (p. 99). Many unhelpful generalizations which have little or no meaning outside the Indo-European setting would then be avoided.

Professor Potter presents the relationship between symbol, image, and referend in diagrammatical form. The line between symbol and referend is dotted, while that between symbol and image is solid. Should the latter not be dotted as well ? for, surely, the connexion is purely arbitrary and conventional.

An extremely valuable part of the book is the select and annotated bibliography. Here the author has succeeded in the difficult task of making a judicious choice from the prodigious number of books and articles. The reviewer has two minor criticisms only : the rather harsh remarks on S. Ullmann's excellent *Principles of Semantics* and the omission of the very noteworthy American symposium *Language in Culture* edited by H. Hoijer (University of Chicago Press 1954). Since the publication of *Modern Linguistics* J. R. Firth's collected *Papers in Linguistics* (O.U.P.) have appeared, which contain much that will be of relevance to philosophers.

The reviewer has made scores of marginal annotations in his copy of *Modern Linguistics*, which cannot be discussed here, but they are an indication of the great interest and value of Professor Potter's book.

EDWARD ULLENDORFF